Republic of Rwanda
Ministry of Education

RTB | RWANDA TVET BOARD

Upholstery

INDUP401

Apply Upholstery Techniques

Competence

RQF Level: 4

Learning Hours 100

Credits: 10

Sector: Construction and Building services

Trade: Interior design

Module Type: Specific module

Curriculum: CBSIND401 TVET Certificate IV in Interior design

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Issue date: June 2023

<table>
<tr><td>Purpose statement</td><td colspan="6">This module describes the skills, knowledge and attitudes required to Apply upholstery techniques. It is intended for learners who have successfully completed level III in interior design and pursuing level IV in interior design. At the end of this module, learners will be able to Assess the surface to apply upholstery, Perform Cost Estimation (BOQ), Perform cutting, Perform assembling and fitting. Qualified learners deemed competent to this competency shall have ability to take responsibility for the carrying out of a range of defined activities in upholstery works under non- directive supervision.</td></tr>
<tr><td>Learning assumed to be in place</td><td colspan="6">Interior space safety measures, Contract Management, Interior space assessment, CAD Software, CAD Rendering, Interior Decoration, Interior Model Making</td></tr>
<tr><td rowspan="6">Delivery modality</td><td colspan="2">Training delivery</td><td>100%</td><td colspan="2">Assessment</td><td>Total 100%</td></tr>
<tr><td colspan="2">Theoretical content</td><td>30%</td><td rowspan="4">Formative assessment</td><td>30%</td><td rowspan="4">50%</td></tr>
<tr><td colspan="2">Practical work:</td><td rowspan="3">70%</td><td rowspan="3">70%</td></tr>
<tr><td>• Group work and presentation</td><td>30%</td></tr>
<tr><td>• Individual work</td><td>40%</td></tr>
<tr><td colspan="3"></td><td colspan="2">Summative Assessment</td><td>50%</td></tr>
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Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1.Assess the surface to apply upholstery	1.1 Upholstery surface is well checked as per upholstery principles.
	1.2 Measurements are taken accurately in accordance with the surface.
2.Perform Cost Estimation (BOQ)	2.1. Upholstery materials and details are exhaustively identified in reference to the design specifications and required standards.
	2.2. Prices are correctly allocated based on market, selected materials and the quality required.

	2.3. Labour costs are accurately and effectively calculated based on work requirements and expected profit margin.
	2.4. Taxes are correctly calculated as per applied tax laws.
	2.5. Final cost estimation is properly prepared in accordance to the project budget.
3.Perform cutting	3.1 Measurements are accurately taken according to product design specifications.
	3.2 Markings on the surface and materials are accurately applied in line with design specifications.
	3.3 Cutting techniques are appropriately applied in line with the markings and design details.
	3.4 Upholstery components are appropriately allocated in line with design patterns.
4. Perform assembling and fitting	4.1 Adhesive and bonding materials are selected in accordance with materials specifications and design details.
	4.2 Padding materials are appropriately applied in accordance with design specifications.
	4.3 Fabrics are well prepared in accordance to the design patterns.
	4.4 Fabrics are well applied on padded surface in accordance to the design patterns.
	4.5 Assembling is accurately performed in line with the design specifications.
	4.6 Finishes are properly applied in accordance with the design specifications.

Intended Knowledge, Skills and Attitude

Knowledge	Skills	Attitude
✓ Identify upholstery fabric materials ✓ Identify upholstery tools and equipment ✓ recognize sewing techniques ✓ describe furniture joints	✓ Use upholstery tools and equipment ✓ prepare bills of quantity ✓ Apply adhesives ✓ measure and marks ✓ Cut fabrics and padding materials ✓ Apply sewing techniques ✓ perform covering of the furniture	✓ Respect the upholstery design details. ✓ Use upholstery materials efficiently and effectively ✓ Apply craftsmanship in upholstery works

Course content

Learning outcomes	At the end of the module the learner will be able to: 1.Assess the surface to apply upholstery. 2.Perform Cost Estimation (BOQ) 3.Perform cutting 4.Perform assembling and fitting
Learning outcome 1: Assess the surface to apply upholstery	**Learning hours: 5**
Indicative content	
▪ **Upholstery principles** ✓ Cleanliness of surface ✓ Stability of the frame ✓ Smoothness of the surface ✓ Stretchiness and tightness of the fabric	

- ✓ Evenness of the foams

- **Upholstery design specifications**
  - ✓ Material properties
  - ✓ Size
  - ✓ Style and Aesthetics
  - ✓ Cleaning and Maintenance
  - ✓ Sustainability
  - ✓ Cost
- **Check upholstery surface**
  - ✓ Texture and Feel
  - ✓ Strength and Stability
  - ✓ Cleanliness
- **Surface measurements**
  - ✓ Length
  - ✓ width
  - ✓ height
  - ✓ depth
  - ✓ Curves
- **Upholstery details**
  - ✓ Piping and Trimming
  - ✓ Seams and Stitches
  - ✓ Tufting
  - ✓ Nail head Trim
  - ✓ Pleats and Ruffles
  - ✓ Buttoning
  - ✓ Welt Cord
  - ✓ Upholstery Tacks/pins
  - ✓ Fringes
  - ✓ Tassels
  - ✓ Beads

Resources required for the learning outcome	
Equipment	▪ N/A
Materials	▪ Papers
Tools	▪ Tape measure ▪ Marker pen ▪ Pencil

	▪ Notebook
Facilitation techniques	▪ Teacher prepares upholstery practical scenario which include types of material, measurements, furniture structure ▪ Teacher divides students into small groups of 2-3 students, provides upholstery design and ask them to identify and discuss upholstery design specifications ▪ Teacher asks students to take surface measurements and identify required details for upholstery works ▪ Each group present and teacher provide feedbacks
Formative assessment methods /(CAT)	▪ Oral assessment ▪ Performance assessment

Learning outcome 2: Perform Cost Estimation (BOQ)	**Learning hours: 20**
Indicative content	
▪ **Upholstery materials** ✓ Fabric ✓ Leather ✓ Vinyl ✓ Microfiber ✓ Jacquard ✓ Silk ✓ Chenille. ✓ Wool ✓ Faux Leather ✓ Sunbrella ✓ Foam ✓ Cotton batting ✓ Polyester fiberfill ✓ Thread ✓ Tacks ✓ Staples ✓ Trim	

- ✓ Adhesive
- ✓ Dacron

- Cost calculations
  - ✓ Material prices
  - ✓ Labour cost
  - ✓ Taxes
- Preparing final cost estimation

Resources required for the learning outcome	
Equipment	▪ Computer ▪ Printer
Materials	▪ Leather ▪ Vinyl ▪ Microfiber ▪ Jacquard ▪ Silk ▪ Chenille. ▪ Wool ▪ Faux Leather ▪ Sunbrella ▪ Foam ▪ Cotton batting ▪ Polyester fiberfill ▪ Thread ▪ Tacks ▪ Staples ▪ Trim ▪ Adhesive ▪ Dacron
Tools	▪ Calculator ▪ Marker pen ▪ Pen

	▪ Notebook ▪ Proforma invoices
Facilitation techniques	▪ Referring to learning outcome 1 scenario, students are asked to estimate the cost of the whole project including material quantity and cost, labour cost, taxes and other related costs. ▪ Each group presents their bills of quantity and teacher provides feedbacks
Formative assessment methods /(CAT)	▪ Oral presentations ▪ Written assessment ▪ Performance assessment ▪ Project assessment

Learning outcome 3: Perform cutting	**Learning hours: 35**
Indicative content	
▪ **Fabric measurements** ✓ Length ✓ width ✓ Curves ✓ Seam allowance ▪ **Mark on the surface and materials** ▪ **Cutting techniques** ✓ Straight Cuts ✓ Curved Cuts ✓ Notching ✓ Mitering ✓ Layered Cutting ✓ Pattern Matching ✓ Trimming ✓ Fussy Cutting ✓ Fringe Cutting ✓ Diagonal Cut ✓ Scissor Cut ✓ Zigzag Cut ✓ Cross Cut ✓ Freehand Cut	

- **Upholstery components**
  - ✓ Frame
  - ✓ Padding
  - ✓ Springs
  - ✓ Webbing
  - ✓ Fabric
  - ✓ Backrest
  - ✓ Armrests
  - ✓ Skirt
  - ✓ Trim
  - ✓ Legs or Feet
- **Design patterns**
  - ✓ Floral
  - ✓ Striped
  - ✓ Damask
  - ✓ Toile
  - ✓ Animal Print
  - ✓ Plaid
  - ✓ Ikat
  - ✓ Chevron
  - ✓ Abstract
  - ✓ Textured
  - ✓ Herringbone

Resources required for the learning outcome	
Equipment	▪ Staple Gun ▪ Sewing Machine ▪ Foam Cutter or Electric Knife ▪ Upholstery Webbing Stretcher ▪ Gloves ▪ Goggles ▪ Dust mask ▪ Overall
Materials	▪ Fabric ▪ Leather ▪ Vinyl ▪ Microfiber ▪ Jacquard ▪ Silk ▪ Chenille. ▪ Wool ▪ Faux Leather

	▪ Sunbrella ▪ Foam ▪ Cotton batting ▪ Polyester fiberfill ▪ Thread ▪ Tacks ▪ Staples ▪ Trim ▪ Adhesive ▪ Dacron ▪ Upholstery Thread ▪ Upholstery Tacks or Staples
Tools	▪ Upholstery Scissors or Shears ▪ Upholstery Needles ▪ Fabric Marking Tools ▪ Upholstery Pliers ▪ Tack Hammer ▪ Measuring Tape ▪ Cutting Mat ▪ Stapler
Facilitation techniques	▪ Referring to learning outcome 1 scenario, students are asked to measure, mark and cut the materials to be used in upholstery. ▪ Each group presents the work done and receive feedbacks.
Formative assessment methods /(CAT)	▪ Oral presentation ▪ Performance assessment

Learning outcome 4: Perform assembling and fitting	**Learning hours: 40**
Indicative content	

- **Adhesive and bonding materials**
  - ✓ Upholstery Adhesive Spray
  - ✓ Fabric Glue
  - ✓ Hot Glue
  - ✓ Contact Adhesive
  - ✓ Foam Adhesive
  - ✓ Seam Sealer
  - ✓ Double-Sided Tape
  - ✓ Hook-and-Loop Fasteners
  - ✓ Staplers
  - ✓ Upholstery Tacks
  - ✓ Thread
- **Padding materials**
  - ✓ Foam
  - ✓ Cotton Batting
  - ✓ Polyester Fiber fill
  - ✓ Down Feathers
  - ✓ Dacron or Polyester Wrap
  - ✓ Horsehair
  - ✓ Rubberized Hair
  - ✓ Polyurethane Foam
  - ✓ Dacron Foam or Wadding
  - ✓ Felt
- **Fabrics**
  - ✓ Cotton
  - ✓ Linen
  - ✓ Velvet
  - ✓ Leather
  - ✓ Microfiber

- ✓ Polyester
- ✓ Silk
- ✓ Chenille
- ✓ Jacquard
- ✓ Tweed

- **Padding steps**
  - ✓ Measuring
  - ✓ Resizing
    - cutting
    - joining
  - ✓ Applying adhesives
  - ✓ Padding on frame
- **Preparing fabrics**
  - ✓ Select fabrics
  - ✓ Measure and cut the fabric.
  - ✓ Position the fabric.
  - ✓ Smooth and adjust.
  - ✓ Trim excess fabric.
  - ✓ Finish with trim.
- **Assembling**
  - ✓ Prepare components
  - ✓ Attach padding
  - ✓ Cut and attach fabric
  - ✓ Sew and stitch
  - ✓ Secure with fasteners
  - ✓ Handle corners and curves.
  - ✓ Install additional components
  - ✓ Test and adjust
  - ✓ Finish and clean

- ✓ Quality check

- **Finishes**
  - ✓ facing
  - ✓ Flame Retardant
  - ✓ Water-Resistant
  - ✓ Antimicrobial
  - ✓ UV-Resistant
  - ✓ Abrasion-Resistant
  - ✓ Anti-Static
  - ✓ Wrinkle-Resistant
  - ✓ Laminated
  - ✓ Polished
- **Techniques of applying upholstery finishes**
  - ✓ Spray Application
  - ✓ Brush Application
  - ✓ Roller Application
  - ✓ Dipping or Immersion
  - ✓ Wiping or Rubbing
  - ✓ Heat Application
  - ✓ Tumble Application

Resources required for the learning outcome

Equipment	▪ Staple Gun ▪ Sewing Machine ▪ Foam Cutter or Electric Knife ▪ Upholstery Webbing Stretcher ▪ Gloves ▪ Goggles ▪ Dust mask ▪ Overall ▪ Safety shoes(boots)
Materials	▪ Fabric ▪ Leather ▪ Vinyl ▪ Microfiber ▪ Jacquard ▪ Silk

	▪ Chenille. ▪ Wool ▪ Faux Leather ▪ Sunbrella ▪ Padding Materials (foam, cotton batting, polyester fiberfill) ▪ Upholstery Thread ▪ Upholstery Tacks or Staples ▪ Upholstery Trim ▪ Adhesive ▪ Batting or Dacron ▪ Stain Repellent Finish ▪ Flame Retardant Finish ▪ Water-Resistant Finish ▪ Antimicrobial Finish ▪ UV-Resistant Finish ▪ Abrasion-Resistant Finish ▪ Anti-Static Finish ▪ Wrinkle-Resistant Finish ▪ Laminated Finish ▪ Polished Finish ▪
Tools	▪ Upholstery Scissors or Shears ▪ Upholstery Needles ▪ Fabric Marking Tools (or fabric marker) ▪ Upholstery Pliers ▪ Tack Hammer ▪ Measuring Tape ▪ Cutting Mat ▪ Brush ▪ Roller
Facilitation techniques	▪ Referring to scenario learning outcome 1, Each group assembles and fits upholstery components and apply relevant available finishes with teachers' assistance ▪ Each group presents their finished products and receive feedbacks from their peers and teacher.

Formative assessment methods /(CAT)	▪ Performance assessment ▪ Oral assessment ▪ Product based assessment

Integrated/Summative assessment

Integrated situation

STN company ltd located in KICUKIRO District/ KANOMBE Sector/ KABEZA cell wants to cover their office chairs and make them more comfortable for their clients.

As an upholstery technician, you are hired and requested to make a cover sample of a chair including the cost estimation of the required upholstery materials using faux leather as a fabric

The measurements of the chair are:

- ✓ Seat of the chair is 40*50*5 cm (length, width and thickness) respectively
- ✓ Back of the chair is 45*50*5 cm (height, width and thickness) respectively

Tools and equipment are available at the site
Frame of the chair is available at the site
Working duration is 8 hours

Resources

Tools	Tape measure, Calculator, Proforma invoices , Upholstery Scissors or Shears, Upholstery Needles ▪ Pen ▪ Tack Hammer ▪ Cutting Mat ▪ Stapler ▪ Brush ▪ Roller
Equipment	▪ Staple Gun ▪ Sewing Machine ▪ Foam Cutter or Electric Knife ▪ Upholstery Webbing Stretcher ▪ Gloves ▪ Goggles ▪ Dust mask ▪ Overall ▪ Safety shoes(boots)

Materials/ Consumables	▪ Leather ▪ Microfiber ▪ Nylon ▪ Polyester ▪ Wool ▪ Sunbrella ▪ Foam ▪ Cotton batting ▪ Thread ▪ Tacks ▪ Staples ▪ Trim ▪ Adhesive ▪ Olefin ▪ Rayon ▪ Adhesive ▪ Water-Resistant Finish

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	
1. Assess the surface to apply upholstery. **(10%)**	Upholstery surface is well checked as per upholstery principles.	The surface is clean			1
		The chair is stable			2
		The surface is smooth			1
	Measurements are taken accurately in accordance with the surface.	Seat measurements are accurately taken: - Length of seat - Width of seat - Thickness of seat			3

		Back measurements are accurately taken: - Width of back of the chair - Height of back of the chair - Thickness of back of the chair			3
2. Perform Cost Estimation (BOQ) **(20%)**	Upholstery materials and details are exhaustively identified in reference to the design specifications and required standards.	Upholstery materials are stated - Fabric - Adhesives - Pad / foams - Pins - Finishes - Pipes and Trims - Buttons - Welt Cord			2
	Prices are correctly allocated based on market, selected materials and the quality required.	Correct quantities are calculated on: - Fabric - Adhesives - Pad / foams - Pins - Finishes - Pipes and Trims - Buttons - Welt Cord			8
		Correct prices are allocated on: - Fabric - Adhesives - Pad / foams - Pins - Finishes - Pipes and Trims - Buttons - Welt Cord			4
	Labour costs are accurately and	Cost of labour is effectively calculated			2

	effectively calculated based on work requirements and expected profit margin.				
	Taxes are correctly calculated as per applied tax laws.	Taxes are correctly calculated			2
	Final cost estimation is properly prepared in accordance to the project budget.	Total cost is correctly calculated			2
3. Perform cutting **(30%)**	Measurements are accurately taken according to product design specifications.	Fabric measurements are correctly taken: - Length of fabric for the seat - Width of fabric for the seat - Width of fabric for the back - Height of fabric for the back			3
		Foam measurements are correctly taken: - Length of foam for the seat - Width of foam for the seat - Thickness of foam for the seat - Thickness of foam for the back - Width of foam for the back - Height of foam for the back			3
	Markings on the surface and materials are accurately applied in line with design specifications.	Marking is correctly done on: - Fabric - Foam/Pads			4

	Cutting techniques are appropriately applied in line with the markings and design details.	Straight cuts are effectively applied			4
		Curved cuts are effectively applied			4
		Freehand cuts are effectively applied			4
		Pattern matching are effectively applied			4
	Upholstery components are appropriately allocated in line with design patterns.	Fabric for seat is correctly allocated			2
		Fabric for back is correctly allocated			2
4.Perform assembling and fitting **(40%)**	Adhesive and bonding materials are selected in accordance with materials specifications and design details.	Wood glue is properly applied			3
		Hot glue is properly applied			3
		Staples are selected			2
		Pins are selected			2
		Nails are selected			2
	Padding materials are appropriately applied in accordance with design specifications.	Foams/Pads are evenly applied			4
	Fabrics are well applied on padded surface in accordance to the design patterns.	Fabrics are well arranged on padded surface			2
		Fabrics are evenly applied			4
	Assembling is accurately performed in line with the design specifications.	Fabrics are tightly stretched			4
		Pins, nails and staples are seamlessly applied			4

	Finishes are properly applied in accordance with the design specifications.	Cleanliness			2
		Smoothness			2
		Tightness			2
		Steadiness			2
		Comfort			2
Total marks					100
Percentage Weightage					100%
Minimum Passing line % (Aggregate):					70%

References

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