



Republic of Rwanda  
Ministry of Education



## DIGITAL BLOCK PATTERN MAKING

**FADDP501**

**Make Digital Block Patterns**

**Competence**

**RQF Level: 5**

**Learning Hours**



**Credits: 10**

**Sector: Arts & craft**

**Trade: Fashion Design**

**Module Type: General Module**

**Curriculum: ARCFAD5001-TVET Certificate V in Fashion Design**

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**Issue Date: June 2024**

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<b>Purpose statement</b>	This module describes knowledge, skills and attitudes required to make digital pattern. At the end of this module, learners will be able to draft digital patterns, perform digital pattern grading and perform digital marker making.					
<b>Learning assumed to be in place</b>	<ul style="list-style-type: none"> <li>• ICT at Workplace</li> <li>• Digital Fashion Illustration</li> </ul>					
<b>Delivery modality</b>	<b>Training delivery</b>	<b>100%</b>	<b>Assessment</b>	<b>Total 100%</b>		
	Theoretical content	30%	Formative assessment	30%		
	Practical work:	70%		70%	50%	
	<ul style="list-style-type: none"> <li>• Group work and presentation</li> </ul>					30%
	<ul style="list-style-type: none"> <li>• Individual work</li> </ul>					40%
	Summative Assessment		50%			

### Elements of Competency and Performance Criteria

Elements of competency	Performance Criteria
<b>1. Draft Digital Patterns</b>	1.1. Workspace is well set according to the patternmaking software application
	1.2. Measurements charts are well created and uploaded according to the software application
	1.3. Patterns are accurately drafted according to patternmaking standards
	1.4. Pattern details and markings are well applied in line with design principles
	1.5. Patterns are saved correctly based on plotter/printer requirements and compatible file formats
	1.6. Plotted patterns are accurately printed in compliance with plotting standards
<b>2. Perform Digital Pattern Grading</b>	2.1. Grading rule was appropriately identified basing on the size range required for the pattern
	2.2. Sizes up and sizes down were accurately drawn and separated following the grading rules.

	2.3. Graded patterns are well saved according to suitable file formats
<b>3. Perform Digital Marker Making</b>	3.1. The production order number is correctly consulted according to company specifications
	3.2. Pattern pieces are properly arranged according to fabric width
	3.3. Yields are correctly provided according to the marked pattern
	3.4. The Marker is accurately saved and plotted/printed according to plotter/printer specifications

**Intended Knowledge, Skills and Attitude**

<b>Knowledge</b>	<b>Skills</b>	<b>Attitude</b>
<ul style="list-style-type: none"> <li>✓ Understanding occupational health and safety</li> <li>✓ Knowledge of measurement taking, calculation &amp; sizing</li> <li>✓ Knowledge of geometry</li> <li>✓ Knowledge of basic estimation and costing</li> <li>✓ Knowledge of seam allowance</li> <li>✓ Knowledge of human body shapes</li> <li>✓ Understanding basic drawing</li> <li>✓ Proficiency in pattern drafting</li> </ul>	<ul style="list-style-type: none"> <li>✓ Skills in pattern drafting</li> <li>✓ Skills in cutting</li> <li>✓ Demonstrating analytical skills</li> <li>✓ Skills in handling tools and equipment</li> <li>✓ Demonstrating problem-solving skills</li> <li>✓ Time management skills</li> <li>✓ Project/production management skills</li> <li>✓ Workshop arrangement skills</li> <li>✓ Drawing skills</li> <li>✓ Communication skills</li> <li>✓ Computer-aided design skills</li> <li>✓ Skills in working with your hands</li> <li>✓ Good customer service skills.</li> <li>✓ Creativity and Innovative skills</li> </ul>	<ul style="list-style-type: none"> <li>✓ Ability to produce high-quality results</li> <li>✓ Ability to learn actively</li> <li>✓ An eye for style and detail</li> <li>✓ Patience and tact</li> <li>✓ Accuracy and neatness</li> <li>✓ Managing one's own time and the time of others.</li> <li>✓ Communicating with others to convey information effectively.</li> <li>✓ Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.</li> <li>✓ Considering the relative costs and benefits of potential actions to choose the most appropriate one.</li> <li>✓ Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.</li> <li>✓ Cooperation - Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.</li> </ul>

		<ul style="list-style-type: none"> <li>✓ Attention to detail - Job requires being careful about detail and thorough in completing work tasks.</li> <li>✓ Integrity - Job requires being honest and ethical.</li> <li>✓ Self-Control-Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behaviour, even in very difficult situations.</li> <li>✓ Stress Tolerance-Job requires accepting criticism and dealing calmly and effectively with high-stress situations.</li> <li>✓ Independence-Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.</li> <li>✓ Dependability-Job requires being reliable, responsible, and dependable, and fulfilling obligations</li> <li>✓ Initiative - Job requires a willingness to take on responsibilities and challenges.</li> <li>✓ Adaptability/Flexibility - Job requires being open to change (positive or negative) and to considerable variety in the workplace.</li> <li>✓ Persistence - Job requires persistence in the face of obstacles.</li> </ul>
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**Course Content**

<b>Learning outcomes</b>	At the end of the module the learner will be able to: <ol style="list-style-type: none"> <li>1. Draft digital patterns</li> <li>2. Perform digital pattern grading</li> <li>3. Perform digital Marker making</li> </ol>
<b>Learning outcome 1: Draft Digital Patterns</b>	<b>Learning hours: 35</b>

**Indicative content**

- Setting Workspace
  - ✓ Basics of patternmaking software applications
    - ✚ Types of patternmaking software applications
    - ✚ Compare and applications Contrasting of different types patternmaking software
  - ✓ Customizing Preferences
  - ✓ Organizing Layers
  - ✓ Establishing Grids and Guides
  - ✓ Familiarizing with Software tools
  - ✓ Configuring output setting
- Creating Measurements charts for basic bodice and skirt blocks
  - ✓ Taking body measurement
  - ✓ Creating measurement table or grid
  - ✓ Entering measurements into the table
  - ✓ Customizing formatting
- Drafting Patterns for basic bodice and skirt blocks
  - ✓ Selecting drawing tools and adjust tool setting
  - ✓ Drafting the blocks patterns/template
  - ✓ Clearing unwanted objects
  - ✓ Separating the pattern pieces
- Applying Pattern details and markings for basic bodice and skirt blocks
  - ✓ Applying seam allowances
  - ✓ Marking the notches
  - ✓ Adding the grainlines
  - ✓ Adding pattern piece information
- Saving Patterns for basic bodice and skirt blocks
  - ✓ Arranging pattern pieces
  - ✓ Setting the parameters of papers for printing
  - ✓ Setting efficiency parameters
  - ✓ Saving the document
- Printing Plotted patterns for basic bodice and skirt blocks

- ✓ Selecting printer or plotter for printing
- ✓ Printing the saved patterns
- ✓ Checking pattern measurements
- ✓ Reviewing patterns

### Resources required for the learning outcome

<b>Equipment</b>	<ul style="list-style-type: none"> <li>▪ Cutting table</li> <li>▪ Computer</li> <li>▪ Printer</li> <li>▪ Plotter</li> <li>▪ Chair</li> <li>▪ Paper cutter machine</li> <li>▪ Projector</li> </ul>
<b>Materials</b>	<ul style="list-style-type: none"> <li>▪ Paper glue</li> <li>▪ Pattern paper</li> <li>▪ Drawing paper</li> <li>▪ Pencils</li> <li>▪ Cartridge ink</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>▪ Pattern-making software</li> <li>▪ Calculator</li> <li>▪ Garment pictures</li> <li>▪ Size chart template</li> <li>▪ Catalogue book</li> <li>▪ Metric Pattern cutting books</li> </ul>
<b>Facilitation techniques</b>	<p><b>Brainstorming, Demonstration and Practical sessions</b></p> <ul style="list-style-type: none"> <li>▪ <b>Brainstorming</b> <ol style="list-style-type: none"> <li>1. In the class, teacher asks students to form manageable group to discuss on: <ul style="list-style-type: none"> <li>✓ Basics of patternmaking software applications</li> <li>✓ Types of patternmaking software applications</li> <li>✓ Compare and applications Contrasting of different types patternmaking software</li> </ul> </li> <li>2. Teacher provide expert view about on the discussions.</li> </ol> </li> <li>▪ <b>Demonstration</b> <ol style="list-style-type: none"> <li>1. In the computer lab, the Teacher demonstrate how to: <ul style="list-style-type: none"> <li>✓ Set the workspace</li> <li>✓ Arrange Workspace</li> <li>✓ Create Measurements charts</li> </ul> </li> </ol> </li> </ul>

	<ul style="list-style-type: none"> <li>✓ Draft pattern</li> <li>✓ Apply Pattern details and markings</li> <li>✓ saving drafted Patterns</li> <li>✓ printing the saved Patterns</li> </ul> <p>2. The Teacher answer the asked question</p> <ul style="list-style-type: none"> <li>▪ <b>Practical session</b> <ol style="list-style-type: none"> <li>1. Teacher will ask the students to draft digital patterns of a bodice block through Measurements charts creation, pattern drafting, Pattern details and markings application, saving drafted Patterns then print/plot.</li> <li>2. The Teacher consults the drafted pattern and provide the necessary input.</li> </ol> </li> </ul>
<b>Formative assessment methods</b>	<ul style="list-style-type: none"> <li>▪ Written assessment</li> <li>▪ Performance evidence</li> <li>▪ Product evidence</li> </ul>

<b>Learning outcome 2: Perform digital pattern grading</b>	<b>Learning hours: 35</b>
<b>Indicative content</b>	
<ul style="list-style-type: none"> <li>• Identifying grading rule <ul style="list-style-type: none"> <li>✓ Accessing the measurement chart</li> <li>✓ Defining the Base size</li> <li>✓ Determining grading increment</li> <li>✓ Calculating grading rules</li> </ul> </li> <li>• Drawing Sizes up and sizes down <ul style="list-style-type: none"> <li>✓ Choosing a grading system <ul style="list-style-type: none"> <li>✚ Point grading</li> <li>✚ Size sets</li> <li>✚ Direct grading</li> </ul> </li> <li>✓ Applying the Grading rule</li> <li>✓ Separating the stacked pattern</li> <li>✓ Arranging the separated pattern</li> </ul> </li> <li>• Saving graded patterns <ul style="list-style-type: none"> <li>✓ Setting the parameters of papers for printing</li> <li>✓ Setting efficiency parameters</li> </ul> </li> </ul>	

✓ Saving the document for printing

### Resources required for the learning outcome

<b>Equipment</b>	<ul style="list-style-type: none"><li>▪ Cutting table</li><li>▪ Computer</li><li>▪ Printer</li><li>▪ Plotter</li><li>▪ Chair</li><li>▪ Paper cutter machine</li><li>▪ projector</li></ul>
<b>Materials</b>	<ul style="list-style-type: none"><li>▪ Paper glue</li><li>▪ Pattern paper</li><li>▪ Drawing paper</li><li>▪ Pencils</li><li>▪ Cartridge</li></ul>
<b>Tools</b>	<ul style="list-style-type: none"><li>▪ Pattern-making software</li><li>▪ Calculator</li><li>▪ Garment pictures</li><li>▪ Size chart template</li><li>▪ Catalogue book</li><li>▪ Metric Pattern cutting books</li></ul>
<b>Facilitation techniques</b>	<p><b>Demonstration and Practical sessions</b></p> <ul style="list-style-type: none"><li>• <b>Demonstration</b><ol style="list-style-type: none"><li>1. In the computer lab, the Teacher guides each trainee to:<ul style="list-style-type: none"><li>✓ Identify Grading rule</li><li>✓ Draw Sizes up and sizes down</li><li>✓ Save graded patterns</li></ul></li><li>2. After the demo session Teacher answers any questions, they might have</li></ol></li><li>• <b>Practice sessions</b><ol style="list-style-type: none"><li>1. Teacher asks the students to perform digital pattern grading of a bodice and skirt block</li><li>2. Teacher monitors and provides assistance to students.</li></ol></li></ul>
<b>Formative assessment methods</b>	<ul style="list-style-type: none"><li>▪ Written assessment</li><li>▪ Performance evidence</li></ul>

- Product evidence

**Learning outcome 3: Perform digital Marker making**

**Learning hours: 30**

**Indicative content**

- Consulting the production order number
  - ✓ Reviewing sub detail
  - ✓ Determining the rations of pattern pieces to quantity of the order
  - ✓ Preparing the marker layout
  - ✓ Calculating the total number of the pattern pieces needed for entered order
- Arranging pattern pieces
  - ✓ Setting of fabric widths and length
  - ✓ Defining marker parameters
  - ✓ Arranging the pattern pieces manually by dragging and dropping on the demanded area
  - ✓ Arranging the patterns automatically by nesting
- Providing yields
  - ✓ Calculating yield % (percentage)
    - ✚ Measuring the total pattern area
    - ✚ Measuring the total fabric area
  - ✓ Analyse calculated yield% (percentage)
- Saving and plotting /printing marker
  - ✓ Setting the parameters of papers for printing
  - ✓ Setting efficiency parameters
  - ✓ Saving the document for printing

**Resources required for the learning outcome**

**Equipment**

- Cutting table
- Computer
- Printer
- Plotter
- Paper cutter machine
- Projector
- Chair

**Materials**

- Paper glue
- Pattern paper

	<ul style="list-style-type: none"> <li>▪ Drawing paper</li> <li>▪ Pencils</li> <li>▪ Cartridge ink</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>▪ Pattern-making software</li> <li>▪ Calculator</li> <li>▪ Garment pictures</li> <li>▪ Size chart template</li> <li>▪ Dressmaking pins</li> <li>▪ Catalogue books</li> <li>▪ Metric Pattern cutting books</li> </ul>
<b>Facilitation techniques</b>	<p><b>Demonstration and Practical sessions</b></p> <ul style="list-style-type: none"> <li>▪ <b>Demonstration</b> <ol style="list-style-type: none"> <li>1. In the computer lab, the Teacher guides each trainee to: <ul style="list-style-type: none"> <li>✓ Consult the production order number</li> <li>✓ Arrange pattern pieces</li> <li>✓ Provide yields</li> <li>✓ Save and plot /print marker</li> </ul> </li> <li>2. After the demo session Teacher answers any questions, they might have</li> </ol> </li> <li>▪ <b>Practice sessions</b> <ol style="list-style-type: none"> <li>1. Teacher will ask the students to Perform digital Marker making of a bodice block</li> <li>2. Teacher monitors and provides assistance to the students.</li> </ol> </li> </ul>
<b>Formative assessment methods /(CAT)</b>	<ul style="list-style-type: none"> <li>▪ Written assessment</li> <li>▪ Performance evidence</li> <li>▪ Product evidence</li> </ul>

## Integrated/Summative assessment

### Integrated situation

Kaneza, as a digital pattern maker at Daxtrirwa garment manufacturing company, is tasked with implementing digital patternmaking for the company's new line of sustainable garment manufacturing. The company aims to enhance accuracy and minimize waste by transitioning from traditional patternmaking methods to digital patternmaking. Kaneza's specific task is to create a basic skirt pattern for a size 32, provide a multi-size grading rule table and grade the basic skirt. Analyse the order for the basic skirts from the

customer and prepare a marker for production. Utilize the patternmaking software application provided. The task is to be completed within 8 hours

**Specifications**

- Draft front and back basic skirt patterns
- Grade one size up and one size down
- Provide a grade rule table for one size up and one size down

**Measurement specification:**

	Measurements in Inches
Waist	30
Waist to Hip	8
Hip	40
Skirt Length	30

**Customer Order**

**To:** Utexrwa Garment Manufacturing Company  
**From:** Nyamata Primary School  
**Date:** ...../...../2024

**Order Details**

**Product:** Skirts  
**Total Quantity:** 10 skirts  
**Sizes and Quantities:**

	Items	Size	Quantity
1	Basic skirt	30	2
2	Basic skirt	32	4
3	Basic skirt	34	4

**Specifications**

1	Fabric	Plain woven, lightweight, cotton/linen/polycotton
2	Colour	
3	Style	Basic skirt
4	Delivery Date	...../...../2024

**Additional Requirements**

- **Sustainability:** Ensure all materials used are eco-friendly.
- **Packaging:** Use sustainable packaging.
- **Quality Control:** Adhere to strict quality control measures.

**Contact Information**

- **Contact Person:** name
- **Phone Number:** 079xxxxxxx
- **Email Address:** xxxxxxxx@gmail.com

**Payment Terms**

- **Payment Method:** credit card/ bank transfer

• **Payment Due Date:** ...../...../2024

**Approval:**

**Date:**...../...../2024

Please confirm receipt of this order and provide an estimated delivery date. If there are any questions or clarifications needed, feel free to contact me at 079xxxxxx or xxxxxxxx@gmail.com

Thank you for your attention to this order.

Best regards,  
name

### Resources

<b>Tools</b>	<ul style="list-style-type: none"><li>▪ Measuring tape</li><li>▪ Electrical power extensions</li><li>▪ Patternmaking software</li><li>▪ Patternmaking for Fashion Design” by Helen Joseph-Armstrong</li><li>▪ “The Pattern Making Primer” by Jo Barnfield and Andrew Richards</li><li>▪ Grading rule tables</li><li>▪ Women’s skirt size charts</li><li>▪ Paper scissors</li><li>▪ Paper cutter machine</li><li>▪ Paper clip</li><li>▪ Storage device</li></ul>
<b>Equipment</b>	<ul style="list-style-type: none"><li>▪ computer with a high-resolution display</li><li>▪ Wide-format plotter</li><li>▪ Printer</li><li>▪ Chair</li><li>▪ Tables</li><li>▪ Projector</li><li>▪ Paper cutter machine</li></ul>
<b>Materials/ Consumables</b>	<ul style="list-style-type: none"><li>▪ Pattern paper</li><li>▪ Ink</li><li>▪ Pen</li><li>▪ Pencil</li><li>▪ Notebook</li><li>▪ Electricity</li><li>▪ Paper</li><li>▪ Sillotape/scotch</li></ul>

▪ Paper glue

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Mark allocation
			Yes	No	
1. <b>Draft Digital Patterns /Create Basic Skirt Block (40%)</b>	1.1. Workspace is well set according to the patternmaking software application	Patternmaking software is correctly selected			.../4
		Layers are well organized			
		Gridlines are well set			
		Output settings are well set			
	1.2. Measurements charts are well created and uploaded according to the software application	Unit measurement is correctly selected			..../5
		Waist measurement is well uploaded			
		Waist to hip measurement well uploaded			
		Hip measurement is well uploaded			
		Skirt length measurement is well uploaded			
	1.3. Patterns are accurately drafted according to patternmaking standards	Straight lines are drawn correctly.			...../10
		curve lines are well-shaped			
		Bolder lines are well indicated			
		Waist measurement is well applied			
Waist to hip measurement is correctly applied					

		Hip measurement is correctly applied			
		Skirt length measurement is correctly applied			
		Waistband of skirt is correctly drafted			
		Front part of skirt is correctly drafted			
		Back part of skirt is correctly drafted			
	1.4. Pattern details and markings are well applied in line with design principles	Seam allowances accurately applied			...../4
		Dart Markings are well placed			
		Grain lines are well placed			
		All patterns are well labelled			
	1.5. Patterns are saved correctly based on plotter/printer requirements and compatible file formats	Folder is created correctly			...../3
		File is well named			
		Correct File formats is selected			
	1.6. Plotted patterns are accurately printed in compliance with plotting standards	Paper size well set			...../9
		Spacing distance well set			
		Printing resolutions well set			
Paper edges well set					
Paper well utilised					

		All pieces are included on the marker			
		All lines are clearly visible			
		Measurements on the marker matches the measurements in the software			
		The marker print out includes all the labels and markings			
<b>2. Perform Digital Pattern Grading/Perform Multi-Size Grading (30%)</b>	<b>2.1.</b> Grading rule was appropriately identified basing on the size range required for the pattern	based size is correctly identified			...../4
		Grading rule table is well generated including one size up and one size down			
	<b>2.2</b> Sizes up and sizes down were accurately drawn and separated following the grading rules	grade rule for one size up is correctly applied			...../4
		grade rule for one size down is correctly applied			
	<b>2.3</b> Graded patterns are well saved according to suitable file formats	Folder is created correctly			...../4
		File is well named			
		Correct File formats is selected			
		Proper selection of lines per size is well done			
<b>3. Perform Digital Marker Making/Perform Marker Making (30%)</b>	<b>3.1</b> The production order number is correctly consulted according to company specifications	Waist measurement is respected			...../8
		Hip measurement is well respect			
		Skirt length is well respected			
		Drafting and grading are well performed			
	<b>3.2</b> Pattern pieces are properly	arrangement of pattern pieces on the marker is well economized			...../8

	arranged according to fabric width	Pattern pieces are well spaced			
		Pattern pieces are well aligned			
		All sizes included on the marker correctly			
	3.3. Yields are correctly provided according to the marked pattern	Size ratio is well calculated			...../8
		Total area for pattern pieces well calculated			
		Total area of fabric well calculated			
		Fabric utilisation is 80% or more			
	3.4. The Marker is accurately saved and plotted/printed according to plotter/printer specifications.	Correct File formats is selected			...../10
		Paper size well set			
		Spacing distance well set			
		Printing resolutions well set			
		Paper edges well set			
		Paper well utilised			
All pieces are included on the marker					
All lines are clearly visible					
Measurements on the marker matches the measurements in the software					
The marker print out includes all the labels and markings					
<b>Total marks</b>					.....
<b>Percentage Weightage</b>					100%
<b>Minimum Passing line % (Aggregate):</b>					70%

## References

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