



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

TECHNICAL DRAWING

PFAD0302

Draw objects

Competence

RQF Level: 3

Learning Hours



80

Credits: 8

Sector: ARTS AND CRAFTS

Trade: PLASTIC AND FINE ART

Module Type: General

Curriculum: CRAPFA3001- TVET CERTIFICATE 3 IN PLASTIC AND FINE ART

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1200

Purpose statement	This module describes the skills, knowledge and attitude required to perform technical drawing. At the end of this module, learners will be able to distinguish and use drawing instruments, materials and equipment, draw lines and symbols used in drawing, Perform 2& 3-dimensional drawing as well as leatherwork drawing plans.					
Delivery modality	Training delivery		100%	Assessment	Total 100%	
	Theoretical content		30%	Formative assessment	30%	
	Practical work:		70%		70%	50%
	• Group project and presentation	20%				
	• Individual project /Work	50%				
		Summative Assessment		50%		






Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Distinguish drawing instruments, materials and equipment	1.1. Drawing material, instruments and equipment are systematically identified with respect to their uses
	1.2. Drawing instruments and equipment are properly described according to their usage
	1.3. Drawing materials, instruments, and equipment are correctly identified, according to the types of drawing
2. Draw lines, symbols and letters	2.1. Lines are properly traced according to their types and size
	2.2. Symbols are properly drawn as used per their types
	2.3. Letters are correctly drawn with respect to types, methods and procedures of lettering
3. Draw objects	3.1. Neat geometrical figures and objects are precisely drawn as per geometrical rules
	3.2. Scale and dimensions are accurately applied in accordance to drawing objects
	3.3. Angle projection is correctly performed according to types and methods of angles projection

Learning outcomes	<p>At the end of the module the learner will be able to:</p> <ol style="list-style-type: none"> 1. Distinguish drawing instruments, materials and equipment 2. Draw lines and symbols and letters 3. Draw objects
4. Learning outcome 1: Distinguish drawing instruments, materials and equipment	Learning hours: 10



Indicative content

- **Introduction to technical drawing**






- ✓ Definition of technical drawing
- ✓ Drawing terminologies
 -  Points and lines
 -  Sections
 -  Views
 -  Projections
 -  Perspective

- **Identification of drawing materials, instruments and equipment**







- ✓ **Writing instrument**




-  Ink-pen
-  Pencils

- ✓ **Tracing instrument**



-  Rulers
-  Set squares (450 set square, 300 -600 set squares, 450 set square with protractor).
-  Protractor
-  Compass
-  Scale ruler

- ✓ **Accessory instruments**

-  Stencils
-  Template
-  Proportion divider
-  Pencil sharpener
-  Eraser
-  Masking tape

-  Drawing board
-  Letter tracing
-  Drawing pins and clip

✓ **Papers**

-  Types of drawing papers
-  Drawing paper formats and their measurements

• **Usage of drawing instruments, material and equipment**

- ✓ Erasing Ink from paper
- ✓ Usage of eraser and lead
- ✓ Measuring angles with a protractor
- ✓ Preparation and usage of a drawing board
- ✓ Ruler usage
- ✓ T-square usage
- ✓ Set-square usage
- ✓ Compass usage

• **Explanation of types of drawing**

- ✓ Technical Drawing
- ✓ Engineering Drawing
- ✓ Surveying drawing
- ✓ Freehand sketching

Resources required for the learning outcome

Equipment	Whiteboard/Blackboard, Drawing board, Projector, Computer
Materials	Books, Drawings, Internet, Papers (A0,A1,A2,A3,A4,A5) ,Graph paper ,Bristol , Tracing paper ,PEN ,Notebook , Marker pen ,Eraser ,Chalks
Tools	Compass, Protractor, drawing pen, Drawing pins and clips, pencils
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

- Performance assessment

Learning outcome 2: Draw lines, symbols and letters	Learning hours: 20
Indicative content	
<ul style="list-style-type: none"> • Tracing lines <ul style="list-style-type: none"> ✓ Definition of drawing lines ✓ Types of drawing Lines ✓ Sizes of drawing Lines • Drawing symbols <ul style="list-style-type: none"> ✓ Definition of symbols in drawing ✓ Functions of symbols in drawing ✓ Types of symbols used in drawing • Introduction to types and procedures of lettering <ul style="list-style-type: none"> ✓ Types of lettering <ul style="list-style-type: none"> ✚ Gothic lettering ✚ Roman lettering ✓ Properties of a good lettering ✓ Methods of forming letters ✓ Letter dimensioning 	
Resources required for the indicative content	
Equipment	Projector, Whiteboard/Blackboard, Letter tracing, Rulers, set squares :(450 set square, 300 -600 set squares, 450 set square with protractor). Protractor
Materials	Drawing book, Pen, Notebook, Ink-pen, Eraser, Pencil
Tools	Pencil sharpener, drawing board, Drawing pins and clips, Compass, Scale ruler Stencils, Template, Proportion divider, Masking tape
Facilitation techniques	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 • Performance assessment

5. Learning outcome 3: Perform 2& 3-dimensional drawing.

Learning hours:30

Indicative content

- **Introduction on standard dimensions and scales**
 - ✓ Dimensioning
 - ✚ Definition
 - ✚ Aims of dimensioning
 - ✚ Guidelines of dimensioning
 - ✚ Components of dimensioning
 - ✚ Principles of dimensioning
 - ✚ Execution/steps of dimensioning
 - ✚ Methods /ways of indicating dimensions
 - ✚ Types of standard dimensioning
 - ✓ Scales
 - ✚ Definition
 - ✚ Importance of using scale
 - ✚ Types of scales
 - ✚ Representation of scales
 - ✚ Size of scales
- **Drawing figures and objects**
 - ✓ Definition of figures and objects
 - ✓ Identification of Figures and objects
 - ✚ 2D figures
 - ✚ 3D objects
 - ✓ Drawing of geometric figures
 - ✓ Drawing of geometric objects
- **Performing angle projection**
 - ✓ Introduction to angles
 - ✚ Definition of angles
 - ✚ Types of angles
 - ✚ Angle measurement
 - ✓ Application of angle Projection
 - ✚ Definition of projection
 - ✚ Types of projection plane
 - ✚ Types of projection
 - ✚ Application of projection

Resources required for the indicative content	
Equipment	<ul style="list-style-type: none"> Whiteboard/Blackboard, Projector, Pen, Notebook, Whiteboard/Blackboard, Ink-pen, Pencils, Letter tracing, Rulers, square, 450 set square, with protractor, Protractor, Compass, Scale ruler, Stencils, Template, Proportion divider, Pencil sharpener, Eraser, Masking tape.
Materials	<ul style="list-style-type: none"> Books Pen Notebook Marker pen Chalks
Tools	<ul style="list-style-type: none"> Computer, Drawing projections , Drawing Sections
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 Performance assessment

References:

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2. Colin H.Simon,Et Al. Manual of Engineering Drawing, 4th Edition Elsevier
3. Frederick E. Giesecke.(2016). Technical Drawing Eighth Edition, OddMix BOOKS
4. Jeyapoovan T. (2010).Lesson Plan for Engineering Graphics, ,Vikas Publishing House Pvt Ltd, New delhi.
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6. Mark W. Huth .(2010). Understanding Construction Drawing, Fifth Edition, Delmar 5 Maxwell Drive,Clifton Park, NY 12065-2919,USA

7. Sankar Prasad Dey. (2019). A textbook of technical drawing (wbscte) s. chand publishing