



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

CSATD301

BASIC TECHNICAL DRAWING

Apply basic technical drawing

Competence



Learning Hours

RQF Level: 3

50

Credits: 5

Sector: ICT AND MULTIMEDIA

Trade: Computer Systems and Architecture

Module Type: General

Curriculum: ICTCSA3001-TVET Certificate III in computer system and architecture

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Issue Date: September 2022

Purpose statement	<p>This general module describes the skills, knowledge, and attitudes required to apply basic technical drawing.</p> <p>On completion of this module, the trainee will be able to Apply basic concepts of technical drawing, apply lines and symbols used in drawing and perform dimensional drawing</p>				
Delivery modality	Training delivery	100%	Assessment	Total 100%	
	Theoretical content	30%	Formative assessment	30%	
	Practical work:			70%	70%
	Group project and presentation	20%			
	Individual project /Work	50%			
		Summative Assessment	50%		

Elements of Competency and Performance Criteria

Element of competence	Performance criteria
1. Apply basic concepts of technical drawing	1.1 Basics of technical drawing are properly identified based on application.
	1.2 Drawing Materials, instruments and equipment are correctly selected according to the standard.
	1.3 Drawing sheet is properly presented according to the technical drawing standard.
2. Apply lines and symbols used in drawing	2.1 Application lines are well identified according to the standard.
	2.2 Symbols are well applied according to the standard.
	2.3 Lettering principles are properly applied.

	2.4 Dimensioning are properly applied according to drawing principles.
3. Perform dimensional drawing	3.1 Geometric angles are well Identified according to the standard.
	3.2 Scales are well applied according to engineering scales.
	3.3 2&3 dimensional are well performed according to the work to be done.

Course content

Learning outcomes	At the end of the module the learner will be able to: 1. Apply basic concepts of technical drawing, 2. Apply lines and symbols used in drawing 3. Perform dimensional drawing
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Learning outcome 1: Apply basic concepts of drawing	Learning hours: 10
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Indicative content

- Introduction to technical drawing
 - ✓ Artistic drawing
 - ✓ Engineering drawing
- Identification of technical drawing instruments/tools, materials and equipment
- Specification of drawing sheet layout
 - ✓ Types
 - ✓ Formats
 - ✓ Sizes
 - ✓ Margins
 - ✓ Title block

	<ul style="list-style-type: none"> ● Purposes ● Elements
✓ Legend	
Resources required for the learning outcome	
Instruments/ tools	<ul style="list-style-type: none"> ✓ Protractor ✓ Compass ✓ Rulers ✓ Set squares ✓ Flexible curves ✓ divider ✓ Pencil sharpener
Materials	<ul style="list-style-type: none"> ✓ Paper ✓ Pencil ✓ Eraser ✓ Drawing pen ✓ Ink pen
Equipment	<ul style="list-style-type: none"> ✓ Drawing board ✓ Drawing table
Facilitation techniques	<ul style="list-style-type: none"> ✓ Brainstorming ✓ Group discussion ✓ Practical exercise
Formative assessment methods	<ul style="list-style-type: none"> ✓ Written assessment ✓ Oral presentation ✓ Product assessment

Learning outcome 2: Apply lines and symbols used in drawing	Learning hours: 20
Indicative content	
<ul style="list-style-type: none"> ● Identification of lines used in drawing <ul style="list-style-type: none"> ✓ Types of lines ✓ Application of lines ● Identification of drawing symbols <ul style="list-style-type: none"> ✓ Functions of symbols ✓ Types of symbols ✓ Application of symbols ● Application of lettering 	

- ✓ Types of lettering
- ✓ Techniques of lettering
- Application of dimensions
 - ✓ The function of dimensioning
 - ✓ Elements of dimension
 - ✓ The rules for dimensioning
 - ✓ The types of dimension

Resources required for the indicative content

Instruments/tools	<ul style="list-style-type: none"> ✓ Protractor ✓ Drawing pins and clips ✓ Compass ✓ Rulers ✓ Set squares ✓ Flexible curves ✓ divider ✓ Pencil sharpener
Materials	<ul style="list-style-type: none"> ✓ Paper ✓ pencil ✓ Eraser
Equipment	<ul style="list-style-type: none"> ✓ Drawing board ✓ Drawing table
Facilitation techniques	<ul style="list-style-type: none"> ✓ Brainstorming ✓ Group discussion ✓ Practical exercises
Formative assessment methods	<ul style="list-style-type: none"> ✓ Written assessment ✓ Oral presentation ✓ Practical assessment

Learning outcome 3: Perform dimensional drawing.

Learning hours: 20

Indicative content

- Identification of angles used in technical drawing
 - ✓ Types of angles
 - ✓ Properties of angles
- Identification of scale types
- Application of 2 and 3 dimensional

<ul style="list-style-type: none"> ✓ 2D ✓ 3D ✓ Methods of projections ✓ Types of projection ✓ Application of projections 	
Resources required for the indicative content	
Instruments/Tools	<ul style="list-style-type: none"> ✓ Protractor ✓ Compass ✓ Rulers ✓ Set squares ✓ T square
Materials	<ul style="list-style-type: none"> ✓ Paper ✓ Eraser ✓ Pencil
Equipment	<ul style="list-style-type: none"> ✓ Drawing board ✓ Drawing table
Facilitation techniques	<ul style="list-style-type: none"> ✓ Brainstorming ✓ Group discussion ✓ Practical exercises
Formative assessment methods	<ul style="list-style-type: none"> ✓ Written assessment ✓ Oral presentation ✓ Practical assessment

References:

1. Wilson, R 1990, Engineering Drawing and Design, Edward Erndol, New York
2. Gupta, R.G. & Prakashan, Satya 1995, A text book of Engineering Drawing, Khana Publisher, Delhi.
3. Gopalakrishna, K.R 1998, Engineering Drawing, Subash Publication, Delhi.
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5. Shah, M.B. and Rana, C.B. (2009). Engineering Drawing. Darling Kindersley (India) Pvt.Ltd
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