REPUBLIC OF KENYA

COMPETENCY BASED MODULAR CURRICULUM

FOR AGRICULTURAL ENGINEERING
KNQF LEVEL 5

(CYCLE 3)

PROGRAMME ISCED CODE: 0716 454 A

TVET CDACC
P.O. BOX 15745-00100 NAIROBI

TECHNICAL DRAWING

UNIT CODE: 0716 441 13A

TVET CDACC UNIT CODE: ENG/CU/AGR/CC/05/5/MA

Relationship to Occupational Standards

This unit addresses the Unit of Competency: **Apply Technical Drawings.**

Duration of Unit: 80 Hours

Unit Description

This unit covers the competencies required by an Agricultural Engineering Craftsperson Level 5 to apply technical drawings. It involves competencies to select, use and maintain drawing equipment and materials. It also involves producing plain geometry drawings, solid geometry drawings, pictorial and orthographic drawings of components.

Summary of Learning Outcomes

S/No	Learning Outcomes	Duration (Hours)
1.	Use and maintain drawing equipment and materials	4
2.	Produce plane geometric drawings	10
3.	Produce pictorial and orthographic drawings of components	20
4.	Produce solid geometry	20
5.	Read and interpret electrical drawings	10
6.	Produce assembly drawings	16
TOTAL		**80**

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Use and maintain drawing equipment and materials	1.1 Identification technical drawing equipment	• Practical • Project

Learning Outcome	Content	Suggested Assessment Methods
	1.2 Identification of drawing materials 1.3 Use and maintenance of drawing equipment 1.4 Use of drawing materials 1.5 Identification of symbols and abbreviations	• Portfolio of evidence • Third party report • Written tests • Oral questioning
2. Produce plain geometric drawings	2.1 Types of lines used in technical drawing 2.2 Types of geometric forms and their construction 2.3 Types of angles and their construction 2.4 Angles measurement 2.5 Angles bisection 2.6 Sketching and interpreting patterns 2.7 Production of drawing patterns	• Practical • Project • Portfolio of evidence • Third party report • Written tests • Oral questioning
3. Produce pictorial and orthographic drawings of components	3.1 Identification and interpretation of symbols and abbreviation 3.2 Production of isometric sketches of components 3.3 Orthographic sketches of components 1.2.1 First angle 1.2.2 Third angle 3.4 Free hand sketching of geometric forms, tools, equipment, diagrams and components.	• Practical • Project • Portfolio of evidence • Third party report • Written tests • Oral questioning

Learning Outcome	Content	Suggested Assessment Methods
4. Produce solid geometry	4.1 Drawing of patterns 4.2 Production of patterns	• Practical • Project • Portfolio of evidence • Third party report • Written tests • Oral questioning
5. Read and interpret electrical drawings	5.1 Interpretation of electrical symbols and abbreviations 5.2 Interepation of electrical schematic designs 5.3 Production of electrical drawings 5.4 Interpretation Hydraulic schematic diagrams	• Practical • Project • Portfolio of evidence • Third party report • Written tests • Oral questioning
6. Produce assembly drawings	6.1 Explosion of orthographic drawings 6.2 Explosion of pictorial views 6.3 Identification of part list 6.4 Production of sectional views 6.5 Hatching of drawings	• practical • portfolio of evidence • Project • Written tests

Suggested Delivery Methods

- Demonstration
- Projects
- Group discussion
- Direct instructions

Recommended Resources for 25 Trainees

- Stationery
- 1 projector

- Drawing equipment and materials
- 12 m by 7 m drawing room

Recommended Resources for 25 Trainees

S/No.	Category/Item	Description/ Specifications	Quantity	Recommended Ratio (Item: Trainee)
A	**Learning Materials**			
1.	Charts with diagrams		5 pcs	1:5
2.	Technical drawing text books		25	1:1
3.	Drawing instruction manuals		25	1:1
B	**Learning Facilities & infrastructure**			
1.	Technical drawing room	40 m^2	1	1:25
2.	Black/ white board		1	1:25
C	**Consumable materials**			
1.	Stationery	Assorted	1 rim of drawing papers	1:25
2.	Masking tape		1 roll	1:25
D	**Tools and Equipment**			
1.	Scientific calculator		25 pcs	1:1
2.	Projector		1 pc	1:25
3.	Drawing board/table		25	1:1