PREPARE AND INTERPRET TECHNICAL DRAWINGS

UNIT CODE: CON/OS/CAJ/CC/02/4/A

UNIT DESCRIPTION

This unit covers the competencies required to prepare and interpret 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

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA *(Bold and italicised terms are elaborated in the Range)*
1. Select, use, and maintain drawing equipment and materials	1.1 ***Drawing equipment*** are identified and gathered according to task requirements 1.2 ***Drawing materials*** are identified and gathered according to task requirements 1.3 Drawing equipment are used and maintained as per manufacturer's instructions 1.4 Drawing materials are used as per workplace procedures 1.5 Waste materials are disposed in accordance with workplace procedures and ***environmental legislations*** 1.6 ***Personal Protective Equipment*** is used according to occupational safety and health regulations
2. Produce plane geometry drawings	2.1 Different types of lines used in drawing and their meanings are identified according to standard drawing conventions

ELEMENT	PERFORMANCE CRITERIA *(Bold and italicised terms are elaborated in the Range)*
	2.2 Different types of ***geometric forms*** are constructed according to ***standard conventions*** 2.3 Different types of angles are constructed according to principles of trigonometry 2.4 Different types of angles are measured using appropriate measuring tools 2.6 Angles are bisected according to standard conventions 2.7 Freehand sketching of different types of geometric forms, tools, equipment, diagrams is conducted
3. Produce solid geometry drawings	3.1 Drawings of patterns are interpreted according to standard conventions 3.2 Developed surfaces of truncated and un truncated regular solids
4. Produce orthographic and pictorial drawings	4.1 Symbols and abbreviations are identified and their meaning interpreted according to standard drawing conventions 4.2 First and third angle orthographic drawings are interpreted and produced in accordance with the standard conventions 4.3 Orthographic elevations are dimensioned in accordance with standard conventions 4.4 Isometric drawings are interpreted and produced in accordance with standard conventions 4.5 Oblique drawings are interpreted as per standard conventions

RANGE

Variable	Range
1. Drawing equipment may include but is not limited to:	• Drawing boards

	• T and set squares • drawing sets,
2. Drawing materials may include but is not limited to:	• Drawing papers • Pencils • Erasers • masking tapes • paper clips
3. Environmental legislations may include but is not limited to:	• EMCA 1999
4. Personal Protective Equipment may include but is not limited to:	• Dust coats • closed leather shoes
5. Geometric forms may include but is not limited to:	• Circles • Triangles • Rectangles • Parallelogram • Polygons • Pyramids • conic sections • prisms, loci

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required skills

The individual needs to demonstrate the following skills:

- Critical thinking
- Drawing
- Interpretation
- Drawing equipment handling
- Communication
- Interpersonal

Required knowledge

The individual needs to demonstrate knowledge of:

- Drawing equipment and materials
- Freehand sketching
- Lettering
- Geometrical constructions
- Types of drawings
- Types of lines
- Isometric drawing conventions, features, characteristics, components
- Orthographic drawing conventions, features, characteristics, components
- Sketches and drawings of simple patterns

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and understanding and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Selected, used, and maintained drawing equipment and materials appropriately 1.2 Was able to produce plain geometry drawings 1.3 Conducted freehand sketching of different types of geometric forms, tools, equipment, diagrams 1.4 Produced solid geometry drawings

	1.5 Developed surfaces of truncated and un truncated regular solids 1.6 Produced pictorial and orthographic drawings correctly
2. Resource Implications	The following resources should be provided: 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Measuring equipment 2.3 Materials relevant to the proposed activity or tasks
3. Methods of Assessment	Competency may be assessed through: 3.1 Practical tests 3.2 Observation
4. Context of Assessment	Competency may be assessed 4.1 On-the-job 4.2 Off-the –job 4.3 During Industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.