

## APPLY TECHNICAL DRAWING

UNIT CODE: CON/OS/PL/CC/02/5/A

### UNIT DESCRIPTION

This unit covers the competencies required to prepare and apply technical drawing. It involves competencies to select, use and maintain drawing equipment and materials. It also involves developing plane geometry drawings, solid geometry drawings, pictorial and orthographic drawings and apply computer aided design

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicised terms are elaborated in the Range)</i>
1. Select, use and maintain drawing equipment and materials	1.1 <b><i>Drawing equipment</i></b> are identified and gathered according to task requirements 1.2 <b><i>Drawing materials</i></b> 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
2. Develop plane geometry drawings	2.1 Freehand sketching of different types of geometric forms and diagrams is conducted 2.2 Different types of lines used in drawing and their meanings are identified according to standard 2.3 drawing conventions 2.4 Different types of <b><i>geometric forms</i></b> are constructed according to <b><i>standard conventions</i></b> 2.5 Different types of angles are constructed, measured and bisected according to principles of trigonometry
3. Develop solid geometry drawings	3.1 Pattern drawings are interpreted according to standard conventions

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>(Bold and italicised terms are elaborated in the Range)</i>
	3.2 solid geometry drawings are constructed according to given plane geometry
4. Develop orthographic and pictorial drawings	4.1 Symbols and abbreviations are identified and interpreted according to standard drawing conventions 4.2 First and third angle orthographic drawings are interpreted and developed in accordance with the standard conventions 4.3 Orthographic elevations are dimensioned in accordance with standard conventions 4.4 Isometric drawings are interpreted and developed in accordance with standard conventions 4.5 Oblique drawings are interpreted and developed in accordance to standard conventions
5. Apply computer Aided design	4.1 Plane geometry drawings are developed using CAD 4.2 Geometry drawings are developed using CAD 4.3 Orthographic drawings are developed using CAD

## RANGE

<b>Variable</b>	<b>Range</b>
1. Drawing equipment may include but is not limited to:	<ul style="list-style-type: none"> <li>• Drawing boards</li> <li>• T squares</li> <li>• Set squares</li> <li>• drawing sets</li> </ul>
2. Drawing materials may include but is not limited to:	<ul style="list-style-type: none"> <li>• Drawing paper</li> <li>• Pencils</li> <li>• Erasers</li> </ul>

	<ul style="list-style-type: none"> <li>• masking tapes</li> <li>• paper clips</li> </ul>
3. Geometric forms may include but is not limited to:	<ul style="list-style-type: none"> <li>• Circles</li> <li>• Triangles</li> <li>• rectangles</li> <li>• parallelogram</li> <li>• polygons</li> <li>• pyramids</li> <li>• conic sections</li> <li>• prisms</li> </ul>
4. Standard conventions may include but is not limited to:	<ul style="list-style-type: none"> <li>• Anatomy of engineering drawing (title block, coordinate grid system, revision block, notes and legends)</li> <li>• Drawing scale (paper size and drawing symbols)</li> <li>• International drawing standards</li> </ul>

## 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
- Sketching
- Interpretation
- Communication
- Inter personal

### 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	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Selected, used and maintained drawing equipment and materials appropriately</li> <li>1.2 Developed plain geometry drawings correctly</li> <li>1.3 Developed solid geometry drawings correctly</li> <li>1.4 Developed pictorial and orthographic drawings correctly</li> </ul>
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>2.1 Drawing room</li> <li>2.2 Drawing equipment and materials</li> <li>2.3 Computers with appropriate program</li> </ul>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>3.1 Practical tests</li> <li>3.2 Oral Questioning</li> </ul>
4. Context of Assessment	<p>Competency may be assessed individually in the actual workplace or a simulated work place setting or during Industrial Attachment</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>