

TECHNICAL DRAWING

UNIT CODE: ENG/OS/AME/CC/01/4/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 of components.

ELEMENTS AND PERFORMANCE CRITERIA

Element These describe the key outcomes which make up workplace function (to be stated in active voice).	Performance criteria These are assessable statements which specify the required level of performance for each of the elements (to be stated in passive voice). Note: bold and italicized terms are elaborated in the range
1. Use and maintain drawing equipment and materials	1.1 Identification and care of <i>drawing equipment</i> 1.2 Identification and care of <i>drawing materials</i> 1.3 Reference to manufacturer's instructions and, workplace procedures on use and maintenance of drawing equipment and materials 1.4 Reference to relevant environmental legislations
2. Produce plane geometry drawings	2.1 Types of <i>lines</i> in drawings 2.2 Construction of <i>geometric forms</i> 2.3 Construction of different angles 2.4 Measurement of different angles 2.5 Bisection of different angles and lines 2.6 Standard drawing conventions
3. Produce solid geometry drawings	3.1 Interpretation of sketches and drawings of patterns 3.2 Sectioning of solids 3.3 Development and interpenetrations of solids
4. Produce solid pictorial drawings	4.1 Free hand sketching 4.2 Isometric drawings 4.3 Oblique drawings

5. Produce orthographic drawings	5.1 Meaning of pictorial and <i>orthographic drawings</i> 5.2 Meaning of sectioning 5.3 Meaning of symbols and abbreviations 5.4 Drawing and interpretation of orthographic elevations 5.5 Dimensioning of orthographic elevations 5.6 Sectioning of views
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RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE
1. Drawing equipment and materials include but not limited to:	<ul style="list-style-type: none"> • Drawing tables • Drawing sets • Drawing papers • Pencils • Erasers • T-squares • Templates
2. Lines include but not limited to:	<ul style="list-style-type: none"> • Construction lines • Dotted lines • Centre lines • Outlines
3. Geometrical forms include but not limited to:	<ul style="list-style-type: none"> • Circles • Triangles • Squares • Rectangles
4. Orthographic drawings include but not limited to:	<ul style="list-style-type: none"> • First angle projection • Third angle projection
5. Elevations include but not limited to:	<ul style="list-style-type: none"> • Front elevation • End elevation • Plan

REQUIRED SKILLS AND KNOWLEDGE

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

Required Skills

The individual needs to demonstrate ability related to:

- Communication
- Team work
- Problem solving
- Planning and organizing
- Self-management
- Measurement
- Use of drawing tools and equipment

Required Knowledge

The individual needs to demonstrate knowledge of:

1. Types of Technical drawing tools, and equipment
2. National legislation and regulations
3. Safe working practices and procedures to be followed when drawing
4. Safety and environmental hazards associated with Technical drawing
5. Basic maintenance and servicing of Technical drawing tools and equipment

EVIDENCE GUIDE

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

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: <ul style="list-style-type: none">• Uses and maintains drawing equipment and materials• Produces plane geometry and solid pictorial drawings• Produces Orthographic drawings
2. Resource Implications	The following resources must be provided: <ul style="list-style-type: none">• Drawing tables• Drawing sets• Drawing papers• Pencils• Erasers• T squares• Templates

3. Methods of Assessment	Competency in this unit may be assessed through: <ul style="list-style-type: none"> • Observation (performance checklist) • Oral • Written • Third party report • Practicals
4. Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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