

TECHNICAL DRAWING

UNIT CODE: ENG/CU/TEX/CC/01/6/A

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Prepare and Interpret Technical Drawings

Duration of Unit: 150 Hours

Unit Description

This unit covers the competencies required to prepare and interpret technical drawings by a Plant technician. 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 and application of CAD software.

Summary of Learning Outcomes

1. Use and maintain drawing equipment and materials
2. Produce plain geometry drawings
3. Produce solid geometry drawings
4. Produce pictorial and orthographic drawings of components
5. Produce assembly drawings
6. Apply CAD software

Learning Outcomes, Content and Suggested Assessment Methods:

Learning Outcome	Content	Suggested Assessment Methods
1. Use and maintain drawing equipment and materials	<ul style="list-style-type: none">• Identification and maintain of drawing equipment and materials• Identification and maintain of drawing materials	<ul style="list-style-type: none">• Observation• Oral questioning• Written tests
2. Produce plain geometry drawings	<ul style="list-style-type: none">• Lettering in drawing• Types of lines in drawings• Construction of geometric forms• Construction of different angles	<ul style="list-style-type: none">• Oral questioning• Written tests• Observation

	<ul style="list-style-type: none"> • Measurement of different angles • Standard drawing conventions 	
3. Produce solid geometry drawings	<ul style="list-style-type: none"> • Interpretation of sketches and drawings of patterns <ul style="list-style-type: none"> • Cylinders • Prisms • Pyramids • Development of surface of interpenetrating solids and truncated solids • Interpenetrations of solids <ul style="list-style-type: none"> • Cylinder to cylinder, • Cylinder to prism, • Prism to prism of equal and unequal diameters 	<ul style="list-style-type: none"> • Observation • Written tests • Oral questioning
4. Produce pictorial and orthographic drawings of components	<ul style="list-style-type: none"> • Meaning of pictorial and orthographic drawings and sectioning • Meaning of symbols and abbreviations • Drawing of isometric, oblique, axonometric, auxiliary and perspective views • Drawing of first and third angle projections • Sectioning of components • Free hand sketching of tools, equipment, components, geometric forms and diagrams 	<ul style="list-style-type: none"> • Observation • Written test • Oral test
5. Produce assembly drawings	<ul style="list-style-type: none"> • Explosion of orthographic views • Explosion of pictorial views • Identification and listing of parts • Production of sectional views • Hatching of drawings 	<ul style="list-style-type: none"> • Observation • Written test • Oral test

<p>6. Apply CAD software in drawing</p>	<ul style="list-style-type: none"> • Meaning and types of CAD e.g. • Auto CAD • Archi CAD • Solid works • Inventor • Circuit maker • Electronic work bench • 2D and 3Ddrafting technique • Annotation of models 	<ul style="list-style-type: none"> • Practical • Observation • Written tests
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Suggested methods of instruction

- Projects
- Demonstration
- Practice by the trainee
- Field trips
- Group discussions
- Direct instructions

Recommended Resources

- Drawing room
- Computer lab
- Drawing equipment and materials
- Computers
- CAD package
- Overhead projector