# TECHNICAL DRAWING

**UNIT CODE:** ENG/CU/EIT/CC/04/6/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. 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 Computer Aided Design (CAD) packages.

**Summary of Learning Outcomes**

1. Use and maintain drawing equipment and materials
2. Produce plane geometry drawings
3. Produce solid geometry drawings
4. Produce pictorial and orthographic drawings of components
5. Apply CAD packages

**Learning Outcomes, Content and Suggested Assessment Methods:**

| Learning Outcome | Content | Suggested Assessment Methods |
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| 1. Use and maintain drawing equipment and materials | ❑ Identification and care of drawing equipment<br>❑ Identification and care of drawing materials<br>❑ Reference to manufacturer's instructions and work place procedures on use and maintenance of drawing equipment and materials<br>❑ Reference to relevant environmental legislations<br>❑ Use of Personal Protective Equipment (PPEs) | ❑ Observation<br>❑ Oral questioning<br>❑ Written tests |
| 2. Produce plane geometry drawings | ❑ Types of lines in drawings<br>❑ Construction of geometric forms e.g. squares, circles | ❑ Oral questioning<br>❑ Practical tests<br>❑ Observation |

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| | ❑ Construction of different angles<br>❑ Measurement of different angles<br>❑ Bisection of different angles and lines<br>❑ Standard drawing conventions | |
| 3. Produce solid geometry drawings | ❑ Interpretation of sketches and drawings of patterns e.g. cylinders, prisms and pyramids<br>❑ Sectioning of solids e.g. prisms, cones<br>❑ Development and interpenetrations of solids e.g. cylinder to cylinder and cylinder to triangular, prism | ❑ Observation<br>❑ Practical tests<br>❑ Oral questioning |
| 4. Produce orthographic drawings | ❑ Meaning of pictorial and orthographic drawings<br>❑ Meaning of sectioning<br>❑ Meaning of symbols and abbreviations<br>❑ Drawing and interpretation of orthographic elevations<br>❑ Dimensioning of orthographic elevations<br>❑ Sectioning of views<br>❑ Assembly drawing | ❑ Observation<br>❑ Practical tests<br>❑ Oral questioning |
| 5. Produce pictorial drawings | ❑ Meaning of pictorial drawings<br>❑ Drawing objects in isometric view<br>❑ Drawing objects in oblique view | ❑ Observation<br>❑ Oral questioning<br>❑ Practical tests |
| 6. Produce electrical drawings | ❑ Electrical symbols and abbreviations<br>❑ Meaning of electrical drawings<br>❑ Drawing of electrical diagrams e.g. block, schematic, circuit, line and wiring | ❑ Observation<br>❑ Oral questioning<br>❑ Practical tests |
| 7. Apply CAD packages | ❑ Identification of CAD packages e.g. AutoCAD, circuit maker<br>❑ Use of CAD packages in drawing of:<br>• Plane geometry<br>• Solid<br>• Orthographic<br>• Pictorial | ❑ Observation<br>❑ Oral questioning<br>❑ Practical tests |

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| | • Electrical e.g. block, schematic, circuit, line and wiring | |

**Suggested Methods of Instruction**

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions

**Recommended Resources**

- Drawing room
- Drawing instruments e.g. T-squares, set squares, drawing sets
- Drawing tables
- Pencils, papers, erasers
- Masking tapes
- Computers installed with relevant CAD packages