

1. Module details**Module name****Drawing Interpretation and Sketching****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 18 - 20 hours.

Module code

NUE210

Discipline code

0789105

2. Module purpose

This module develops the skills and knowledge required to interpret engineering drawings and produce detailed freehand sketches of component parts and complete objects associated with one of the following industries: mechanical, fabrication, electrical, electronic, refrigeration and air conditioning.

3. Prerequisites

Nil.

4. Relationship to competency standards

This module provides some of the knowledge and skills underpinning competence in the following standards:

E.S.I: 2.7-2.13, 3.1, 3.2, 3.4-3.8, 3.11, 3.13-3.16

ECIA (Vol 8): 5.1, 5.2, 5.3, 5.4.

5. Content**Technical drawing standards, conventions and specifications to AS 1100, with strong emphasis on interpretation**

sheet types, title block information, materials parts list, revision table, grid referencing scales

line types (visible outlines, hidden outlines, dimensioning lines, centre lines)

orthogonal projection of views (third angle - detail and assembly drawings)

mechanical conventions

fabrication conventions

three dimensional view drawings (axonometric, isometric, oblique)

sectioning standards and conventions (whole, part)

engineering drawing symbols (mechanical, fabrication, welding, electrical)

dimensioning (orthogonal, isometric)

floor layout and site plans

geometric tolerance interpretation (straightness, flatness, squareness, parallelism and concentricity only)

engineering abbreviations

drawing interpretation techniques (detail drawings: orthogonal projection - 3rd angle only and three dimensional, assembly drawings and three dimensions exploded - e.g. as in equipment manuals)

Freehand drawing skills used to produce detail drawing in 3rd angle orthogonal and isometric projection

6. Assessment strategy

Assessment methods

Short-answer test
 Interpretation of drawing symbols
 Practical exercises

Conditions of assessment

Normally learning and assessment will take place in a classroom/drawing room environment.

7. Learning outcome details

Learning outcome 1

Interpret the practical implications of information specified on technical drawings as appropriate to the electrical, electronic, mechanical, fabrication, refrigeration and air conditioning industries.

Assessment criteria

- 1.1 Interpret specifications on detail drawings of simple components.
- 1.2 Interpret information on simple assembly drawings.
- 1.3 Interpret information on simple electrical drawings.
- 1.4 Interpret information on layout and site plans.

Learning outcome 2

Produce freehand sketches from detail specifications gained by measuring simple components and assemblies as appropriate to the mechanical, fabrication and electrical industries.

Assessment criteria

- 2.1 Using appropriate workshop instruments measure a simple component to a tolerance ± 0.5 mm.
- 2.2 Draw freehand a component, assembly and structure showing the dimensions. The drawing is to be in general accordance with AS 1100, part 101.
- 2.3 Draw a simple floor plan for the location of at least five machines in a factory.

8. Delivery of the module

Delivery strategy

The strategies used should provide opportunity for each student to develop skills to the level described in the learning outcomes.

Resource requirements

It is recommended that learning and assessment be facilitated in a holistic manner which may require a learning sequence other than indicated in the body of this module descriptor. Basic drawing equipment and relevant class aids. Resources should be sufficient for students to work on an individual basis. Enterprise Drawings
Relevant Australian Standards.

Occupational health and safety requirements

Students should be made aware of Occupational Health and Safety issues in all situations and be expected to demonstrate safe industry practices at all times. Electrical safety must be emphasised.