

**1. Module details****Module name****Building Systems and Materials****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 36 - 40 hours.

**Module code**

NUE494

**Discipline code**

0703110

**2. Module purpose**

This module will provide the student with the knowledge and skills required to identify building structures and common building materials used in domestic and commercial building construction industry. It will also provide the student with the skills for correct manual handling techniques to move material and equipment.

**3. Prerequisites****4. Relationship to competency standards**

This module provides part of the underpinning knowledge and skills in the 'Evidence Guide' of specific units of competency in the National Electrotechnology Training Package and provides similar support, where mapped, to equivalent units in the National Metals and Engineering Competency Standards. For details refer to the module to unit maps, available from NUEITAB.

**5. Content****1. Building structures**

- domestic: footing types, floor construction, internal and external walls, roofs
- commercial: floor, walls and roof construction

**2. Building materials**

- timber
- concrete
- brick/masonry
- plasterboard
- tiles
- steel
- paints

**3. Architectural drawings**

- site plans
- floor plans

**4. Manual handling techniques**

- safe manual handling for lifting, pushing, pulling and holding
- state/territory regulations for safe manual handling

**6. Assessment strategy**

**Assessment methods**

Assessment should be progressive reflecting a holistic approach to ensure the module purpose is met. To assist in ensuring validity, reliability and fairness assessment instruments should include practical exercises, assignments and written tests consisting of a number of item types, such as multiple choice, short answer and problem solving.

**Conditions of assessment**

Learning and assessment will take place in an environment that is conducive to a learner's development.

**7. Learning outcome details**

**Learning outcome 1**

**Correctly identify and describe different structure types used in the commercial and domestic housing sectors of the Building and Construction Industry**

**Assessment criteria**

- 1.1 Identify and describe footing types and floor constructions
- 1.2 Identify and describe internal and external wall types
- 1.3 Identify and describe different roof structures
- 1.4 Discuss and describe the particular approaches which need to be taken by an electrical worker in a given structure type

**Learning outcome 2**

**Identify and describe the characteristics of common materials used in the Building and Construction Industry**

**Assessment criteria**

- 2.1 Identify common building materials:
  - timber, particle board, medium density fibre board, plywood, flooring lining boards
  - reinforced concrete
  - pre-stressed concrete
  - brick, brickwork, masonry and mortars
  - paints
  - tiles
  - plastics
  - steel
  - insulating materials and plasterboard
- 2.2 Describe the characteristic and uses of the materials identified in 2.1
- 2.3 List safety procedures when using materials identified in 2.1

**Learning outcome 3**

**Identify and read architectural drawings**

**Assessment criteria**

- 3.1 Identify and distinguish between site plans, floor plans, and standard drawings

**Learning outcome 4**

**Assessment criteria**

3.2 Using a site plan, locate the following items:

- electrical services
- telecommunication services
- main switchboard
- distribution boards

3.3 Using a floor plan, locate the following items:

- lighting points and switches
- socket outlets
- telecommunication and entertainment points
- fixed appliances
- smoke and security alarm equipment

**Apply principles of manual materials handling to tasks involved in the Electrotechnology industry**

4.1 Demonstrate safe manual handling of materials involving:

- lifting
- pushing
- pulling
- holding

4.2 State safe manual handling regulations of your state or territory

**8. Delivery of the module**

**Delivery strategy**

Delivery strategies must be suitable for learning both theoretical and practical aspects described in the module purpose. It is considered that the most effective method to achieve this is by integration of theory and practice where students learn by experimentation, research and reports. It is recommended that learning and assessment be facilitated in a holistic manner that may require learning outcome sequence other than that indicated in the module.

**Resource requirements**

Resources should be sufficient for students to carry out learning activities on an individual basis.

*Suggested Learning Resource:*

**Occupational health and safety requirements**

A safe and healthy environment will be provided for students and teachers as well as the particular safety procedures followed as part of the learning / teaching activity and content.