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## 1. Module details

**Module name**

**MANAGEMENT OF INDOOR AIR QUALITY**

**Nominal duration**

One module  
It is anticipated that students will achieve the competencies specified in 35 to 40 hours.

**Module codes**

**NR036**

**Discipline code**

## 2. Module purpose

To provide the student with the knowledge and skills to be able to prevent building indoor air quality problems and to be able to resolve them should they develop.

## 3. Prerequisites

Nil

## 4. Relationship to competency standards

TBA

## 5. Content

1. Indoor air quality factors:
  - interactive nature of pollutants
  - comfort criteria
  - source of odours
  - pathway from source to occupants
  - occupant activities
  - impact on productivity
2. Cause of IAQ problems:
  - moisture
  - mould and mildew
  - bacterial growths
  - asbestos and other particulate
  - volatile chemicals produced in the building
  - chemical products
3. HVAC systems:
  - types of HVAC systems
  - system components
  - duct cleaning
  - system commissioning
  - operation of system
  - damper adjustment
4. Measurements:
  - common parameters to measure
  - measurement devices available
  - instrument calibration
  - analysing and interpreting results

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## 6. Learning outcome details

### Learning outcome 1

#### Assessment criteria

- laboratory tests
  - standards
5. Resolving IAQ problems:
- conducting IAQ investigations
  - the walk-through
  - building history
  - HVAC system information
  - occupant interviews
  - troubleshooting
6. IAQ management:
- building IAQ profile
  - location of potential IAQ problems
  - procedures to control IAQ
  - communication
  - response to complaints
  - equipment preventive maintenance
  - chemical inventory

On the completion of this module, the learner will be able to:

Identify the factors affecting indoor air quality.

1.1 To correctly describe the key factors that influence indoor air quality.

### Learning outcome 2

#### Assessment criteria

Describe the role of particulates, chemicals and microbial growths in causing indoor air quality problems.

2.1 To correctly describe problem sources such as gases, particulates or microbial matter.

### Learning outcome 3

#### Assessment criteria

Inspect components of air handling systems and make adjustments to meet code requirements.

3.1 To demonstrate an ability to inspect and adjust air handling plan components and to interpret the requirements of Australian Standards.

### Learning outcome 4

#### Assessment criteria

Measure indoor air quality parameters to achieve correct results.

4.1 To correctly carry out measurements and use of IAQ monitoring instruments.

### Learning outcome 5

#### Assessment criteria

Describe the steps involved in resolving IAQ problems.

5.1 To correctly carry out measures to improve IAQ after a problem has been identified.

### Learning outcome 6

Develop an IAQ management plan.

## 7. Assessment Strategies

6.1 To correctly set out a plan to manage a building for satisfactory IAQ.

Each assessment strategy is unique to each Learning Outcome:

1. Competency is assessed by a written short answer question in a 30 minute test. Students must correctly answer at least 7 of 10 questions. For multiple choice, all responses must be correct.

2. Competency is assessed by a written short answer 30-minute test. Students must correctly answer at least 7 of 10 questions. For multiple response questions, all responses must be correct.

3. Competency is assessed by written short answer questions in a 30-minute test. Students must answer at least 7 of 10 questions. For multiple response questions, all responses must be correct. Moreover, practical exercises in 1 of 2 competency tests must be carried out:

- Test 1 60 minutes, or
- Test 2 60 minutes.

Students must complete one of the practical tests to specifications.

4. Competency is assessed by a 30-minute test. Students must answer at least 7 of 10 questions. For multiple response questions, all responses must be correct. Moreover, practical exercises in 1 of 2 competency tests must be carried out:

- Test 1 60 minutes, or
- Test 2 60 minutes.

Students must complete one of the practical tests to specifications.

5. Competency is assessed by a 30-minute test. Students must answer at least 7 of 10 questions. For multiple response questions, all responses must be correct. Moreover, practical exercises in 1 of 2 competency tests must be carried out:

- Test 1 60 minutes, or
- Test 2 60 minutes.

Students must complete one of the practical tests to specifications.

6. Competency is assessed by a 30-minute test. Students must answer at least 7 of 10 questions.

## 8. Module Delivery Strategies

This module may be taught by active participation, integrated practice and theory, illustration, demonstration and description with as much scope as possible for individual research within the industrial environment.

The following supplementary practice should be applied where

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## 9. Resource Requirements

practicable:

- familiarisation with safety and environmental issues specific to the industry.

The teacher of this module should have the Refrigeration Mechanics Trade Certificate, or equivalent, plus at least 5 years relevant industrial experience and knowledge of competency based assessment.

Major plant:

- ducted HVAC (heating ventilation air conditioning) system, and operating and maintenance manuals
- several dry fabric filter cells and frames.

Other materials:

- pitot tube and digital anemometer
- revolving vane anemometer
- balancing hood with digital anemometer
- draft gauge, magnehelic gauge
- stroboscope (strobe light)
- sling psychrometer
- spanners, screwdrivers to facilitate disassembly of equipment components
- trade literature on HVAC equipment particularly filters
- manufacturer's instructions.

## 10. Occupational health and safety requirements

Learners must be made aware of all relevant OH&S issues in all situations and are required to demonstrate safe working practices at all times.

All work areas must comply with current OH&S legislation.