

1. Module details	
Module name	Refrigeration Systems Safety – <i>Monitoring competency development</i>
Module duration	It is expected that students with the appropriate entry skills will successfully complete this module in 10-12 hours.
Module code	NUE508B
Discipline code	0703310 & 0703320
2. Module purpose	This module provides prerequisite direction for module NUE508A Refrigeration Systems Safety, and guidance for evaluating and supporting development towards the industry approved competency profile to maximise the efficacy of the development effort.
3. Learning Pathways	
Intended use	This module is intended to formalise the relationship between the RTO and the learner, so as to establish feedback arrangements for learners and their employers on the learner's competency development as well as developing, where necessary, strategies to respond to deficiencies in their development against the approved industry profile.
Competency Development Plan	This module is to be used in an “industry approved competency development plan ¹ ”. Sufficient supporting evidence is to be gathered and presented from the plan such that, it indicates that the learner is ready to undertake a final assessment of competency – NUE 508A.
4. Relationship to competency standards	This module provides a process for evaluating evidence of competency development related to all the underpinning knowledge and skills as detailed in the “Evidence Guide” of units in the National Electrotechnology Training Package UTE99 for Certificate III in Electrotechnology Refrigeration and Air Conditioning. The module provides similar support for equivalent units where formally mapped and agreed by respective National ITABs in other relevant National Training Package qualifications.
5. Content	Monitoring the Learner’s Competency Development

¹ Industry Approved Competency Development Plan – means a formal training plan recommended by the appropriate National Industry Training Advisory Body (ITAB) for the respective National Training Package.

6. Assessment strategy

Assessment scope

Assessment shall reflect an holistic approach to ensure all the critical aspects of refrigeration and air conditioning work as specified in learning outcomes one to three are clearly demonstrated and achieved. To assist in ensuring validity, reliability and fairness assessment instruments should include practical exercises, assignments and written oral and tests.

Conditions of assessment

Assessment shall be under supervision of a qualified assessor and will take place in a simulated or appropriate workplace environment.

Event structure

The assessment event shall be structured to evaluate evidence from integrated practical, written and oral components over the period of competency development plan and be based on real world scenarios in a simulated or appropriate workplace environment. Evidence from a variety of assessment item types/approaches shall be included in the overall evaluation.

Setting and evaluation

1. The assessment for competency may be set and evaluated by the RTO, and be in accordance with the industry approved competency development plan/training model. However, where a licensed assessment outcome is needed it is also required the assessment shall take into account point 2 below by integrating into the assessment requirements the criteria set by the regulator and industry. For example, where a:
 - Restricted Electrical license is needed to enable “associated electrical work²” to be carried out.
 - CFC/HCFC license is required to use and/or purchase CFC/HCFC refrigerants.
 - Refrigeration / Air Conditioning Mechanics license is required to install, maintain and service refrigeration and/or air conditioning systems.
2. The assessment for licensing shall be set and be evaluated independent from the RTO as per NUE 508A Refrigeration Systems Safety.

Conducting assessment

The evaluation of evidence and decisions shall be undertaken by qualified assessor(s) independent of those who assist in the delivery of a learner's competency development and in accordance with requirements of the regulator and industry.

² “associated electrical work” is all work required to service and maintain refrigeration and air conditioning plant such as; disconnect and reconnect electric motors, testing and fault finding on electrical power and control circuits, minor wiring alterations and repair and adjustment of electrical components.

7. Learning outcome details

Learning outcome 1

The RTO nominee and learner, and where appropriate, the employer, confirm the industry approved competency development plan. This is to enable the learner to periodically demonstrate ability to work safely in a refrigeration / air conditioning environment under supervision relevant to the industry approved competency development plan and according to regulatory requirements

- 1.1 Show evidence of ability and consistency in identifying risks associated with working with refrigeration / air conditioning installations and equipment
- 1.2 Show evidence of consistently following workplace safety procedures and practices
- 1.3 Identify measures taken to protect against specific workplace hazards

Learning outcome 2

Periodically demonstrate development towards the industry approved competency plan

- 2.1 Show evidence of skill development through daily activities in the workplace against the industry approved competency development profile
- 2.2 Show evidence of underpinning knowledge and skill development through completion of relevant modules against the industry approved competency development plan

Learning outcome 3

Periodically review the development of the learner towards the industry approved competency development plan

- 3.1 Identify areas requiring further attention in development towards achieving the industry competency development profile
- 3.2 Devise strategies (activities) to address issues raised in 3.1
- 3.3 Review competency development plan to include strategies devised in 3.2
- 3.4 Undertake revised development activities if necessary

8. Delivery of the module

Delivery scope

This module contains two components related to ensuring a learner achieves the required level of competency. This being specified in the National Training Package qualification Certificate III in Electrotechnology Refrigeration and Air conditioning, and related units of competence or equivalent, and requirements of the regulator and the industry for the issuance of any required licence/s. The two components are:

Delivery strategies

- a) assessment of technical knowledge and skills critical to safety of work associated with electrical installations (*with final confirmation of these in NUE 508A*)
 - b) guidance to ensure the maximum efficacy in competency development plan of the learner (*gathering evidence towards development of the learner's competence*)
-
- a) *Assessment component*: refer to item 6 Assessment Strategies
 - b) *Guidance component*: Periodically and no less than three times through the period of the learner's competency development, evaluate evidence of the learner's development towards competency against the "Industry Approved Competency Development Plan". In doing so the following shall apply:
 - 1. Review and monitor progress towards achieving the industry competency profile in terms of :
 - i) work performance associated with day to day activities in the workplace
 - ii) completing part of the necessary underpinning knowledge and skills detailed in any relevant national ITAB module map. For instance the NUEITAB's National Electrotechnology Module Map.
 - 2. Provide formative feedback to the learner.
 - 3. Identify areas requiring further attention with respect to developing towards the industry profile
 - 4. Where area(s) requiring further attention are identified strategies for improvement, including remedial measures are to be negotiated between the learner and RTO, and where appropriate the employer.
 - 5. Update the learner's competency development plan, established against the approved industry profile at the commencement of training.
 - 6. The competency development plan is revised and the relevant parties retain copies.
 - 7. The training plan is predicated on a nominal period of 7,300 hours to develop all the necessary competencies including skills critical to personal and public safety.

Resource requirements

- Student competency development profile log.
- Current record of progress in off job program.
- In relation to restricted electrical licensing assessment reports/tests to the independent evaluator(s) as designated by the electrical regulator and industry.
- References include:
 - Relevant standards Published by Standards Australia / Standards New Zealand including;
 - HB40: The Australian Refrigeration and Air-conditioning Code of Good Practice - Reduction of emissions of fluorocarbon refrigerants.
 - AS1677: Refrigerating systems
 - AS 1668.2: The use of mechanical ventilation and air-conditioning in buildings - Mechanical ventilation for acceptable indoor-air quality
 - AS3666: Air-handling and water systems of buildings - Microbial control - Design, installation and commissioning
 - Relevant Commonwealth and State Acts and Regulations.
 - Boyle, G. Australian Refrigeration and Air Conditioning, Volumes 1& 2, WA Trust Publications.
 - Jenneson, J. R. 1995, *Electrical Principles for Electrical Trades*, McGraw Hill, Sydney

Occupational health and safety requirements

A safe and healthy environment will be provided for students and teachers as well as safety procedure with regard to learning/teaching activity