

1. Module details**Module name****Automobile Alarm Systems****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

NUE097

Discipline code

0703230 Electronic Installation and Maintenance.

2. Module purpose

This module aims to provide the student with the skills to select and install automobile accessories and security equipment. On completion of this module the student will be able to describe the safety requirements necessary in the security industry, make reliable soldered connections, describe the operation and use of various OEM and after market accessories used in the automobile industry and select appropriate accessories and equipment for automobile installation.

3. Prerequisites

Nil.

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**Standards**

Introduction to AS/NZS3749.2

Purpose of standard

Installer liability

Installer insurance

Detectors

Types of detector

Theory of operation

Vehicles

Initial vehicle check

Jump start procedures

Layout

Assembly/disassembly

Wiring/terminations

Accessory placement

Upgrading original equipment

Fault finding – during installation
post installation
System/customer demonstration

Vehicle accessories

Immobilisers: standard; passive; active
Sunroof closures
Sirens: location installation
Window lift units
Boot release
Central locking: principles; installation; maintaining original vehicle integrity; interfacing with vehicle systems

Remote control devices

Principles of operation
Principles of arming/disarming: receivers; proximity; jack/plug

Relays

Types
Applications

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

Describe the requirements of AS/NZS 3749.2: - 1997 and identify the legal liability of vehicle security alarm system installers.

Assessment criteria

- 1.1 Describe the requirements for the installation and maintenance of vehicle alarm security systems as defined in the standard.
- 1.2 Describe the need for liability insurance when installing and maintaining vehicle alarm security systems.
- 1.3 State the legal liability incurred by installers when performing tasks associated with the:
 - maintenance of existing vehicle installations
 - testing of initial vehicle installations.

Learning outcome 2

Describe the different types of detectors available for use in vehicle security alarm systems.

Assessment criteria

- 2.1 List the types of detectors available for use in vehicle security alarm systems.
- 2.2 Identify and classify the detectors by their application.
- 2.3 Describe the advantages and disadvantages of different types of detectors.
- 2.4 Install and test a selection of typical detectors used in vehicle alarm security systems.

Learning outcome 3

Describe the installation methods and commissioning requirements for vehicle accessories and alarm output devices.

Assessment criteria

- 3.1 List the vehicle accessory installation requirements of AS/NZS 3749.2.
- 3.2 List vehicle precautions to be observed when installing accessories and alarms.
- 3.3 List suitable mounting locations for vehicle accessories, sirens and other alarm output devices.

	3.4	Identify and terminate a range of cables and connectors used in automobiles.
	3.5	Demonstrate the correct use of appropriate test equipment.
	3.6	Install and test a range of OEM and after market vehicle accessories, alarms and alarm output devices.
	3.7	Diagnose and repair OEM and after market vehicle accessories, alarms and alarm output devices.
	3.8	Verify the post service operation of an alarm or vehicle accessory installation in an automobile.
Learning outcome 4		Outline the characteristics of vehicle theft detection systems.
Assessment criteria	4.1	Describe the advantages and disadvantages of various methods and devices used as theft deterrents.
	4.2	List the available types of OEM and after market theft deterrent devices.
	4.3	Describe the main features of commonly fitted theft deterrent devices.
	4.4	State methods commonly used to gain illegal access to an automobile.
Learning outcome 5		Describe the operating requirements of remote control devices used in the automotive industry.
Assessment criteria	5.1	Describe the principles of operation of remote control devices.
	5.2	State the advantages and disadvantages of a range of different remote control devices.
	5.3	List the requirements of AS/NZS 3749.2 for remote control devices.
	5.4	Perform functional tests on remote control devices.

Learning outcome 6	Install and test vehicle immobilisers.
Assessment criteria	<p>6.1 State the minimum specifications required by AS/NZS 3749.2 for vehicle immobilisers.</p> <p>6.2 Describe the principles of operation of vehicle immobilisers.</p> <p>6.3 Compare the advantages and disadvantages of the different types of immobilisers.</p> <p>6.4 Perform functional tests on vehicle immobilisers and verify their operation.</p>
8. Delivery of the module	
Delivery strategy	<p>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.</p>
Resource requirements	<p>Learners will require access to:</p> <ul style="list-style-type: none"> • Appropriate industrial workshops and vehicles. • Standard electronics laboratory equipment for making measurements. • Standard electronics hand tools for assembly and installation of systems
Occupational health and safety requirements	<p>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.</p>