

-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number-	2210350	-Session-1990-91
-Superclass-	XS	

-Title-	WHEELS AND TYRES: TYRE FITTING AND REPAIRS
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-DESCRIPTION-

Purpose	This module is designed to develop the skills and knowledge required to carry out tyre fitting and repairs.
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It is aimed at those intending to pursue a career in the motor vehicle repair industry. The module is also designed to complement RTITB module LV204B Wheels and Tyres: Tyre Fitting and Repairs and will provide the student with the necessary skills and knowledge to prepare for the RTITB Skills Test. It should be noted however that adequate supporting industrial experience will also be necessary.

Preferred Entry Level	Modules numbered 94370 through 94378 inclusive
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Outcomes	The student should: <ol style="list-style-type: none">1. identify types of construction and tyre identification markings;2. remove, repair and replace tyres and tubes;3. outline the principles of wheel balance;4. balance wheels and tyre assemblies.
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Assessment Procedures	Acceptable performance in the module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.
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The following abbreviations are used below:

PC	Performance Criteria
IA	Instrument of Assessment

Note: The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

OUTCOME 1 IDENTIFY TYPES OF CONSTRUCTION AND TYRE IDENTIFICATION MARKINGS

- PCs
- (a) Constructional differences between x-ply and radial ply tyres are correctly identified.
 - (b) Size markings from side wall for x-ply and radial ply tyres are correctly interpreted.
 - (c) The correct mixing of radial with x-ply tyres is correctly stated.

IA Structured questions

The student will be presented with 6 structured questions to test the recall of knowledge and application of skills relating to x-ply and radial ply tyres.

The questions should be allocated as follows:

- (i) constructional differences - 2 questions
- (ii) size markings - 2 questions
- (iii) tyre mixing - 2 questions

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student producing 6 correct responses. A suitable checklist may be used to record student performance.

OUTCOME 2 REMOVE, REPAIR AND REPLACE TYRES AND TUBES

- PCs
- (a) Common wheel rims and tyres are correctly identified.
 - (b) Recommended procedures for manufacturers' equipment are followed.
 - (c) Current legislation with respect to replacement and repair of tyres and tubes is observed.
 - (d) Safe working practices relevant to the task are followed.

IA Practical Exercise

The student will be presented with a series of practical exercises in a workshop environment to test the recall of knowledge and application of skills relating to tyres and tubes.

Each student should:

- (i) remove and replace all of the following components:

tyres, standard rim types;
 tyres, patent rim types;
 valves (tubeless rim);
 valve cores;
 inner tubes;
 gaiters (if applicable);

- (ii) repair and check tubeless and tube type punctures and tyre pressures.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student completing all tasks. A suitable checklist may be used to record student performance.

OUTCOME 3

OUTLINE THE PRINCIPLES OF WHEEL BALANCE

PCs

- (a) The main cause of static imbalance is correctly stated.
 (b) A method of correcting static imbalance is correctly stated.
 (c) The main causes of dynamic imbalance are correctly stated.
 (d) A method of correcting dynamic imbalance is correctly stated.
 (e) On vehicle and off vehicle wheel balancers are identified.

IA Structured Questions

The student will be presented with 6 structured questions to test the recall of knowledge and application of skills relating to wheel balancing in accordance with recommended procedures. These procedures may be found in a variety of technical publications including manufacturers' workshop manuals and service bulletins.

The questions should be allocated as follows:

- | | | |
|-------|--------------------------------|---------------|
| (i) | causes of static imbalance | - 1 question |
| (ii) | method of correcting imbalance | - 1 question |
| (iii) | causes of dynamic imbalance | - 1 question |
| (iv) | method of correcting imbalance | - 1 question |
| (v) | wheel balancers | - 2 questions |

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student producing 6 correct responses. A suitable checklist may be used to record student performance.

OUTCOME 4 BALANCE WHEELS AND TYRE ASSEMBLIES

PCs

- (a) The wheel/tyre assembly is inspected for defects.
- (b) Existing balance weights are removed.
- (c) Wheel/tyre assembly is checked for cleanliness.
- (d) Recommended safety procedures are followed.
- (e) Tyre pressures are checked and adjusted.
- (f) Equipment manufacturer's recommended procedures are followed.

IA Practical Exercise

The student will be presented with one of two practical exercises in a workshop environment to test the recall of knowledge and application of skills relating to balancing wheel and tyre assemblies in accordance with recommended procedures. These procedures may be found in a variety of technical publications including manufacturer's workshop manuals and service bulletins. Each student should undertake one of the following tasks.

- (i) static and dynamic balance on the vehicle;
- (ii) static and dynamic balance off the vehicle;

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student producing an accurately balanced wheel/tyre assembly on or off the vehicle. A suitable checklist may be used to record student performance.

**The following sections of the descriptor are offered as guidance.
They are not mandatory.**

CONTENT/CONTEXT

Safety regulations, safe working practices and procedures should be observed at all times.

Corresponding to Outcomes 1-4:

This module should be taught in the context most suited to the students' particular needs.

This module is intended to give students an understanding of the reasons for servicing of vehicle wheels and tyres, as a means of promoting vehicle safety, prolonging operational life and maintaining to original specification.

Students should be made aware of the general trends in automotive technology and reminded that any particular manufacturer may utilise specialised equipment which is not common throughout the whole industry.

SUGGESTED LEARNING AND TEACHING APPROACHES

This module should be undertaken in a service workshop with an adequate range of vehicles equipped with the components to be covered. Students should have full access to relevant service publications for the satisfactory performance of the tasks.

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