

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
24 Douglas Street
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number-	0094374	-Session-1989-90
-Superclass-	XS	

-Title-	CRAFT PRACTICES FOR VEHICLE TRADES (x^{1/2})
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-DESCRIPTION-

Purpose	This module is designed to introduce the basic craft skills involved in the vehicle trades area to include marking out, cutting, drilling and soldering.
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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 MV014F Light and Heavy Vehicles: Repair and Maintenance Skills and will provide the student with the necessary knowledge and skills to prepare for the RTITB Skills Test. It should be noted however that adequate supporting industrial experience will also be necessary.

Preferred Entry Level	No formal entry requirements
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Learning Outcomes	<p>The student should:</p> <ol style="list-style-type: none">1. mark out materials prior to cutting, filing and joining;2. cut materials accurately using appropriate equipment;3. carry out basic drilling operations;4. cut internal and external screw threads using hand tools;5. carry out soft soldering techniques.
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Content/ Context	Safety regulations, safe working practices and procedures should be observed at all times.
	<u>Corresponding to Learning Outcomes 1 to 5:</u>
	This module should be taught in the context most suited to the student's particular needs.
	1&2. The need for accuracy when marking out cutting, joining and forming, the importance of working to given limits, and the economical use of materials should be stressed.
	3&4. The importance of drill tap and die selection with regard to size, cutting speed and cooling must be related to the material to be cut. An appreciation only for cutting speeds is required.
	5. The importance of thorough cleanliness, use of fluxes, proper tinning and adequate heat source for any soldering operation must be stressed.
Suggested Learning and Teaching Approaches	This module should be undertaken in a service workshop with an adequate range of metal and non-metal materials and specialist tools required for accurate marking out, cutting, drilling, threading, removing broken studs and soft soldering tasks to be covered.
	The importance of preventing damage to other materials close to the area of work, for example when soldering or removing broken studs must be stressed.
Assessment Procedures	Acceptable performance in the module will be satisfactory achievement of all the performance criteria specified for each Learning Outcome.
	The following abbreviations are used below:
	LO Learning Outcome
	IA Instrument of Assessment
	PC Performance Criteria

LO1 MARK OUT MATERIALS PRIOR TO CUTTING, FILING AND JOINING

PC The student:

- (a) uses appropriate procedures to prepare the material;
- (b) uses appropriate instruments to mark out material;
- (b) measures and marks out accurately;
- (c) uses material economically.

IA Practical Exercise

The student will be presented with a practical exercise to test the application of knowledge and skills involved in marking out materials prior to cutting, filing and joining.

The exercise will consist of marking out linear, angular and radial dimensions.

Satisfactory achievement of the Learning Outcome will be based on all performance criteria being met. This will be demonstrated by the student achieving dimensions to an accuracy of $\pm 0.5\text{mm}$ and \pm one degree.

LO2 CUT MATERIALS ACCURATELY USING APPROPRIATE EQUIPMENT

PC The student:

- (a) identifies appropriate cutting tools for metals and non-metals of varying density and shape;
- (b) cuts pre-marked materials using a range of common hand tools;
- (c) follows all safety requirements relevant to the task.

IA Practical Exercise.

The student will be presented with a practical exercise to test the application of knowledge and skills involved in cutting and shaping premarked materials.

The exercise should involve the following materials:

- (i) M S sheet 20 SWG
- (ii) B M S bar 10mm
- (iii) M S flat bar 25 x 4mm
- (iv) aluminium bar 10mm
- (v) PC sheet (polycarbonate)

Satisfactory achievement of the Learning Outcome will be based on all performance criteria being met. This will be demonstrated by the student achieving dimensions to an accuracy of $\pm 0.5\text{mm}$ and \pm one degree.

LO3

CARRY OUT BASIC DRILLING OPERATIONS

PC The student should:

- (a) selects drill bits appropriate to the task;
- (b) uses recommended drilling procedures;
- (c) drills and removes a broken stud;
- (d) follows all safety requirements relevant to the task.

IA Practical Exercise.

The student will be presented with a practical exercise to test the application of knowledge and skills involved in carrying out basic drilling operations.

The exercise should involve drilling through holes to 13mm diameter and two blind holes to given depths. In addition, the student should drill and, using a stud extractor, extract a 10mm diameter stud.

Satisfactory achievement of the Learning Outcome will be based on all performance criteria being met. This will be demonstrated by the student drilling holes perpendicular to the surface, and the blind holes to $\pm 1\text{mm}$ and removal of stud, without damage to host/parent material.

LO4

CUT INTERNAL AND EXTERNAL SCREW THREADS USING HAND TOOLS.

PC The student:

- (a) selects appropriate thread cutting tools;
- (b) selects appropriate tapping drill;
- (c) uses appropriate procedures to cut screw threads;
- (d) restores damaged threads;
- (e) follows all safety requirements relevant to the task.

IA Practical Exercise.

The student will be presented with a practical exercise to test the application of knowledge and skills involved in cutting internal and external threads.

The exercise should involve cutting and restoring threads in hard and soft materials and include through and blind holes.

Satisfactory achievement of the Learning Outcomes will be based on all performance criteria being met. This will be demonstrated by the student cutting threads square and producing a well formed thread.

LO5

CARRY OUT SOFT SOLDERING TECHNIQUES

PC The student:

- (a) uses appropriate surface preparation techniques;
- (b) selects equipment and materials appropriate to the task;
- (c) uses appropriate procedures to obtain a satisfactory joint;
- (d) follows all safety requirements relevant to the task.

IA Practical Exercise

The student will be presented with a practical exercise to test the application of knowledge and skills involved in carrying out soft soldering techniques.

The exercise should involve soldering light and heavy terminals to appropriate cables and joining together two pieces of light gauge material.

Satisfactory achievement of the Learning Outcome will be based on all performance criteria being met. This will be demonstrated by the student producing satisfactory joints without damage to cable insulation where applicable.