

**-SQA- SCOTTISH QUALIFICATIONS AUTHORITY**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

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<b>-Module Number-</b>	<b>2210911</b>	<b>-Session-1991-92</b>
<b>-Superclass-</b>	<b>XR</b>	

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<b>-Title-</b>	<b>VEHICLE BODYWORK: CALCULATIONS AND COMMUNICATIONS</b>
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**-DESCRIPTION-**

Purpose	This module is designed for those employed in the repair and painting of motor vehicle bodywork. It is designed to provide the student with the skills required to deal with calculations and communications related to their employment.
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The module is also designed to prepare students for the RTITB Foundation Modules BR001 and BR003 and could form the basis for further modules in calculations and communications according to the students career plans.

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Preferred Entry Level	No formal entry requirements.
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Outcomes	The student should: <ol style="list-style-type: none"><li>1. complete basic calculations related to vehicle bodywork;</li><li>2. use information from tables, graphs and charts;</li><li>3. use information from engineering drawings related to vehicle bodywork;</li><li>4. use manufacturers' manuals and written technical instructions;</li><li>5. prepare routine verbal and written reports.</li></ol>
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Assessment Procedures	Acceptable performance in this 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 COMPLETE BASIC CALCULATIONS RELATED TO VEHICLE BODYWORK

- PCs
- (a) Use of units of time is correct.
  - (b) Use of units of length, weight, capacity, and temperature is correct.
  - (c) Use of simple percentages is correct.
  - (d) Use of simple proportions is correct.
  - (e) Calculation of mean is correct.

IA Objective Items

The student will be set an exercise consisting of 24 objective items to test the knowledge and skills required to complete basic calculations related to vehicle bodywork as they would arise in work situations.

The exercise should be set in a practical environment. Each topic should be assessed on the number of occasions indicated:

(i)	length	3
	weight	3
	capacity	3
	temperature	3
(ii)	time	3
(iii)	percentages	3
(iv)	proportion	3
(v)	mean	3

The questions should assess more than 1 situation and should be applied to work situations.

Satisfactory achievement of the Outcome will be demonstrated by the student producing 8 correct responses for (i) with at least 1 correct response for length, weight, capacity and temperature and 2 correct responses for each of topics (ii), (iii), (iv) and (v).

**OUTCOME 2                    USE INFORMATION FROM TABLES, GRAPHS AND CHARTS**

- PCs
- (a) Extraction of information from tables, graphs and charts is correct.
  - (b) Interpretation of the information extracted from tables, graphs and charts is correct in terms of meaning.
  - (c) Application of the information interpreted from tables, graphs and charts is correct in terms of use in further situations.

**IA    Restricted Response Questions**

The student will be set an exercise consisting of 6 restricted response questions to test competence in extracting, interpreting and applying information from tables, graphs and charts.

The exercise should assess all PCs in the order as given above as they would be applied to a work situation. The exercise should be set in a practical environment.

Each topic should be assessed on the number of occasions indicated:

- (i)        use of tables    2
- (ii)       use of graphs    2
- (iii)      use of charts     2

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student extracting, interpreting and applying information correctly in:

- 1 question on the use of tables;
- 1 question on the use of graphs and;
- 1 question on the use of charts.

**OUTCOME 3                    USE INFORMATION FROM ENGINEERING DRAWINGS RELATED TO VEHICLE BODYWORK**

- PCs
- (a) The extraction of information from orthographic, isometric, sectioned and exploded drawings is correct.
  - (b) The interpretation of information from orthographic, isometric, sectioned and exploded drawings is correct in terms of meaning.
  - (c) The use of information from orthographic, isometric, sectioned and exploded drawings is correct in terms of application to other tasks.

## IA Restricted Response Questions

The student will be set an exercise consisting of 10 restricted response questions to test competence in extracting, interpreting and applying information from the types of engineering drawings commonly used in vehicle bodywork.

The exercises should assess all PCs in the order as given above as they would be applied to work situation. The exercise should be set in a practical environment.

Each topic should be assessed on the number of occasions indicated:

(i)	1st angle orthographic drawings	2
(ii)	3rd angle orthographic drawings	2
(iii)	isometric drawings	2
(iv)	sectioned drawings	2
(v)	exploded drawings (parts diagrams)	2

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student extracting, interpreting and applying information correctly in 1 of the above exercises on each topic.

#### **OUTCOME 4 USE MANUFACTURERS' MANUALS AND WRITTEN TECHNICAL INSTRUCTIONS**

PCs

- (a) The extraction of information from manufacturers' manuals and published technical instructions is correct.
- (b) The interpretation of information from manufacturers' manuals and published technical instructions is correct in terms of meaning.
- (c) The use of information from manufacturers' manuals and published technical instructions is correct in terms of application to other tasks.

## IA Restricted Response Questions

The student will be set an exercise consisting of restricted response questions to test competence in extracting, interpreting and applying written information from manufacturers' manuals, Thatcham publications and other technical instructions commonly used in vehicle bodywork.

The student should be set at least 3 questions relating to practical situations requiring the use of different forms of written publications to find, interpret and use information for stated applications.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student extracting, interpreting and using the information required for at least 2 of the above exercises.

**OUTCOME 5                    PREPARE ROUTINE VERBAL AND WRITTEN REPORTS**

- PCs
- (a) The delivery of verbal reports on matters relating to work is clear and concise.
  - (b) The preparation of written reports on matters relating to work is clear and concise.
  - (c) The preparation of parts lists and work schedules is suitable for the completion of estimates.

**IA      Restricted Response Questions**

The student will be set an exercise consisting of restricted response questions to test competence at giving clear, concise verbal and written reports to superiors or customers on matters related to the practical work the student is doing.

Proforma paperwork may be used for the written reports and the student may refer to personally written notes when giving a verbal report.

Each student should be assessed on 3 verbal reports, 2 general written reports and 2 combined parts lists/work schedules for identified tasks.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student:

- (i) giving 2 clear and concise verbal reports;
- (ii) producing 1 satisfactory written report;
- (iii) producing 1 satisfactory parts list/work schedule.

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

### CONTENT/CONTEXT

Corresponding to Outcomes 1-5:

1. The units used in calculations should all relate to vehicle body repair, paint and body building applications and work situations.
2. The graphs, tables and charts should be those used by the trade for a range of vehicle bodywork applications such as paint mixing charts, welding equipment tables, repair time schedules etc.
3. The drawings used should be up to date examples of the drawings provided by vehicle manufacturers, component suppliers and others as a method of providing essential information.
4. A range of up to date publications provided by vehicle manufacturers. Thatcham, paint suppliers, equipment suppliers and others should be available for exercises. Emphasis should be placed on the importance of knowing where to find correct information rather than attempting to remember information which may be out of date.
5. The student should be encouraged to give both verbal and written reports, possibly in the form of log books, as an on-going part of their training. The emphasis should be on the clarity and conciseness of the reports rather than on grammar, punctuation and spelling.

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### SUGGESTED LEARNING AND TEACHING APPROACHES

This module descriptor deals with a number of Outcomes which have applications in almost the entire range of vehicle body repair, paint and body building work.

The opportunity is therefore available to teach this module as an integrating module spread throughout a programme of other more technical modules.

It may also incorporate some of the log book, recording requirements for some training organisations.

Where this is done, it will still be necessary to assess each Outcome in accordance with this descriptor and maintain discrete records of student's results.

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