

**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

**Hanover House  
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GLASGOW G2 7NG**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

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<b>-Module Number-</b>	<b>0074514</b>	<b>-Session-1987-88</b>
<b>-Superclass-</b>	<b>XR</b>	

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<b>-Title-</b>	<b>VEHICLE BODY BUILDING: PUBLIC SERVICE VEHICLES SUBSTRUCTURES</b>
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**-DESCRIPTION-**

Type and Purpose	A <u>specialist</u> module which develops the knowledge and skills required for the design and construction of public service vehicle sub-structures.
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Preferred Entry Level	74505 Vehicle Body Building: Introduction
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Learning Outcomes	<p>The student should:</p> <ol style="list-style-type: none"><li>1. know and apply the principles of chassis/underframe design as related to public service vehicles;</li><li>2. know and apply the principles of base frame design when related to separate and fully integral construction;</li><li>3. select and apply the appropriate design criteria for a public service vehicle sub-structure.</li></ol>
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Content/ Context	<p>Safety regulations and safe working practices and procedures should be observed at all times.</p> <ol style="list-style-type: none"><li>1. Effects of legislation on public service vehicle (P.S.V.) design. A comparison of goods and P.S.V. chassis. The difference between bus type i.e. city buses, service buses and luxury coaches.</li></ol> <p>Normal and low height double decked vehicles. Sub-structure lay-outs for single and double decked vehicles. Separate and integral, and semi-integral construction.</p>
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Characteristics of semi and fully integrated sub-structures.

2. Materials for the manufacture of base frames. Selection of base frame materials. Available base frame sections. Factors affecting the design of the base frames. Appropriate mounting methods for base frames.
3. Collation of information to produce an acceptable sub-structure design.

Suggested Learning and Teaching Approaches

The lecturer should demonstrate the procedures and working methods used to achieve each learning outcome. This should be followed by student practical assignments on scale units if working space is restricted.

Lecturer/demonstrations should relate practical application and theory.

A practical activity should involve the development of the design of a P.S.V. sub-structure.

Assessment Procedures

Acceptable performance in the module will be satisfactory achievement of 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 IA Written/graphical exercise.

PC The student prepares a report which:

(a) identifies the design requirements of one P.S.V. sub-structure to MOT test standards and manufacturers' specifications;

(b) identifies and names the layout of five P.S.V. sub-structures.

- LO2 IA Assignment report.
- PC The student prepares a report which:
- (a) identifies the criteria for selection of the base frame material to include:
    - (i) type of material;
    - (ii) strength of material;
    - (iii) rigidity of material;
    - (iv) load bearing capacity;
  - (b) identifies the design factors of P.S.V. base frames.
- LO3 IA Practical design exercise in which the student designs and constructs a section of a substructure which includes 2 longitudinal members, 2 cross members, 2 outriggers, provision for the attachment of pillars and 2 different methods of fastening.
- PC The student
- (a) selects the correct design criteria;
  - (b) applies the criteria to the specifications given;
  - (c) uses correct tools and equipment;
  - (d) observes all safety regulations.