

-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

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| -Module Number- | 4110312 | -Session- 1992-93 |
| -Superclass- | TH | |

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| -Title- | ELECTRICAL INSTALLATION: LAYOUT AND FIXINGS (x¹/₂) |
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-DESCRIPTION-

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| Purpose | This half-module is designed to develop a general appreciation of a typical domestic electrical installation and the building components affecting that installation. |
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It is aimed at those following a career in electrical installation and receiving complementary work experience in the industry.

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| Preferred Entry Level | 2160010 Electrical Fundamentals. 4110302 Electrical Installation: Site Procedures (x 1/2). |
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| Outcomes | The student should: <ol style="list-style-type: none">1. identify a range of domestic electrical accessories and their standard applications;2. identify a range of standard building components from construction drawings;3. mark out on site the electrical installation information from a scale drawing;4. fix a range of electrical accessories to a selection of building structures. |
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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 IDENTIFY A RANGE OF DOMESTIC ELECTRICAL ACCESSORIES AND THEIR STANDARD APPLICATIONS

- PCs
- (a) The identification of all the given examples of domestic electrical accessories is correct.
 - (b) The identification of the standard applications of all the given examples of domestic electrical accessories is correct.

IA Objective Items

The student will be set an exercise consisting of objective items to test the knowledge required to identify a range of domestic electrical accessories and their standard applications.

The student will be presented with 10 examples of domestic electrical accessories and will be required to identify them and the standard application of each.

Objective Items could be either short answer questions, multiple choice questions, a matching exercise, a grid exercise or a completion exercise.

Satisfactory achievement of the Outcome will be based on the student attaining both Performance Criteria. This will be demonstrated by the student identifying all the accessories and their standard applications correctly.

OUTCOME 2 IDENTIFY A RANGE OF STANDARD BUILDING COMPONENTS FROM CONSTRUCTION DRAWINGS

- PCs
- (a) The identification of the building components is correct in accordance with British Standard graphical symbols.

IA Matching Exercise

The student will be set a matching exercise to test the knowledge required to identify a range of standard building components from construction drawings.

The student will be presented with a construction drawing or drawings showing common building components. The student will be required to identify six specified components from the symbols on the drawing(s).

Satisfactory achievement of the Outcome will be based on the student attaining the Performance Criterion. This will be demonstrated by the student identifying all the components correctly.

OUTCOME 3 MARK OUT ON SITE THE ELECTRICAL INSTALLATION INFORMATION FROM A SCALE DRAWING

PCs

- (a) The interpretation of the information on the scale drawing is correct.
- (b) The transfer of the relevant information to the site is correct in terms of:
 - (i) clear marking;
 - (ii) accuracy within a tolerance of 2mm.
- (c) Working practices followed by the student are safe and in accordance with the current relevant Health and Safety regulations and IEE regulations.

IA Practical Exercise

The student will be set a practical exercise to test the knowledge and skills required to mark out on site the electrical installation information from a scale drawing.

The student will be presented with a scale drawing, detailing at least 6 horizontal and 6 vertical measurements, relating to an electrical installation, and will be required to carry out the following tasks:

- (i) interpret the relevant information;
- (ii) transfer the information to the walls, floor and ceiling of the site to a maximum height of 3 metres.

Satisfactory achievement of the Outcome will be based on the student attaining all the Performance Criteria.

OUTCOME 4 FIX A RANGE OF ELECTRICAL ACCESSORIES TO A SELECTION OF BUILDING STRUCTURES

- PCs
- (a) The fixing of the electrical accessories is correct in terms of:
- (i) the use of approved fixing techniques in each case;
 - (ii) correct application of tools;
 - (iii) secure fixing;
 - (iv) accurate positioning in accordance with instructions.
- (b) Working practices followed by the student are safe and in accordance with the current relevant Health and Safety regulations and IEE regulations.

IA Practical Exercise

The student will be set a practical exercise to test the knowledge and skills required to fix a range of electrical accessories to a selection of building structures.

The student will be presented with 5 examples of structures to include domestic ceilings, walls and partitions. There will be one structure in each of the following compositions: wood, brick, blockwork, plasterwork and ceramic.

The student will be required to fix, by appropriate means, an electrical accessory to each of the above surfaces.

Satisfactory achievement of the Outcome will be based on the student attaining both Performance Criteria.

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

CONTENT/CONTEXT

1. Domestic electrical accessories to include the following: cooker control, consumer's unit, switches, lampholders, isolators, sockets and boxes, clips and ceiling roses and other fittings. Standard applications of the above in domestic situations.
 2. Standard building components, to include the following: brick, plasterboard, wood, breeze block, screed, reinforced concrete, ceramic, for inside and outside use. British Standard graphical symbols for above as found in standard construction drawings.
 3. Electrical installation scale drawings, using British Standard graphical symbols. Current Health and Safety and IEE regulations.
 4. Wood, brick, blockwork, plasterwork, ceramic structures, to include domestic ceilings, walls and partitions. Electrical accessories to include domestic ceiling rose, cooker control, light switch, socket and box, consumer's unit.
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SUGGESTED LEARNING AND TEACHING APPROACHES

The delivery of the module as a whole would benefit from visits to a working site.

1. The classroom workshops or laboratories could be used to provide examples of a range of accessories and their purpose. Reference could be made to 84103 PVC Sheathed Wiring and accessories used in connection with that module. A common range of domestic accessories could be gathered together by the students and discussed in class, identifying their purpose.
 - 2&3. General discussion on the British Standard graphical symbols on construction drawings could be related to the materials seen in the classroom/workshop. A number of prepared drawings could be used to identify various materials and this information could be related to drilling or fixing procedures and procedures for marking out on site.
 4. As much practice as possible is desirable in fixing different types of accessory to different structures.
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