

National Unit Specification: general information

UNIT	Product Design: Developing Design Proposals (Higher)
NUMBER	DF4W 12
COURSE	Product Design (Higher)

SUMMARY

In this Unit candidates generate and develop ideas to satisfy a specification and work toward a solution through design activity. Candidates will apply design knowledge to develop ideas and will communicate and justify decisions taken in reaching a potential solution. Candidates will use written, graphical and modelling techniques to convey their ideas and produce a potential solution. The Unit is suitable for candidates with previous experience in related subjects (such as Craft and Design, Graphic Communication or Art and Design). It is also suitable as an introduction for candidates studying product design for the first time.

OUTCOMES

1. Produce a design proposal.
2. Use graphic techniques during the production of a design proposal.
3. Use modelling techniques during the production of a design proposal.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have achieved one of the following or equivalent:

- ◆ Standard Grade Craft and Design at Credit level
- ◆ Standard Grade Graphic Communication at Credit level
- ◆ Standard Grade Art and Design at Credit level
- ◆ The Unit *Product Design: Developing Design Proposals* at Intermediate 2

Administrative Information

Superclass:	VF
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National Unit Specification: general information (cont)

UNIT Product Design: Developing Design Proposals (Higher)

CREDIT VALUE

1 credit at Higher (6 SCQF credit points at SCQF level 6*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

CORE SKILLS

There is no automatic certification of Core Skills or Core Skills components in this Unit.

National Unit Specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

OUTCOME 1

Produce a design proposal.

Performance Criteria

- (a) A wide range of alternative ideas is generated and developed.
- (b) A design proposal is reached through the application of design knowledge.
- (c) Decisions made in reaching the design proposal are recorded and justified.

Evidence Requirements

(See Evidence Requirements for the Unit at the end of the statement of standards).

OUTCOME 2

Use graphic techniques during the production of a design proposal.

Performance Criteria

- (a) A range of types of drawings and sketches is produced.
- (b) Drawings and sketches are used to effectively communicate the development of ideas and the design proposal.
- (c) Rendering skills are used to effectively communicate the development of ideas and the design proposal.

Evidence Requirements

(See Evidence Requirements for the Unit at the end of the statement of standards).

OUTCOME 3

Use modelling techniques during the production of a design proposal.

Performance Criteria

- (a) A range of types of model are produced.
- (b) Practical skills are used effectively.

Evidence Requirements

(See Evidence Requirements for the Unit at the end of the statement of standards).

National Unit Specification: statement of standards (cont)

UNIT Product Design: Developing Design Proposals (Higher)

EVIDENCE REQUIREMENTS FOR THE UNIT

Evidence for this Unit can be written or oral, and graphical. The evidence should be produced under supervised conditions. Candidates are required to produce a folio of work which provides evidence for all Outcomes. The evidence may consist of work produced in response to a single task or a number of smaller tasks. This evidence will be produced as a natural part of the teaching and learning process.

The folio of work will include a mixture of the following:

- ◆ text to communicate the main features of the design proposal
- ◆ a number of different types of graphic techniques to convey ideas
- ◆ photographs or computer images to show a range of models.

Centres must be satisfied that the evidence submitted is the work of individual candidates. Although group work may be used as a learning and teaching approach, any work which contributes to a candidate's folio for assessment must be carried out on an individual basis.

Achievement is decided by the use of a cut-off score. The standard to be applied is detailed in the National Assessment Bank item available for this Unit. If a centre wishes to design its own assessments for this Unit, they should be of a comparable standard.

National Unit Specification: support notes

UNIT Product Design: Developing Design Proposals (Higher)

This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

This Unit allows the candidate to develop design proposals which will meet a specification. The context is one of creative practical activity where candidates have the opportunity to enhance their design, graphic and modelling skills.

The Course content which is likely to be covered in this Unit is detailed below:

Idea generation:	Morphological analysis, thought sharers, technology transfer, analogy, lateral thinking. Application of idea generation techniques.
Development and refinement of ideas:	Application of knowledge and understanding. Synthesis of ideas. Justification and recording of decisions taken. Presentation techniques. Modelling techniques.
Graphic techniques:	Annotated sketches, working drawings, isometric, oblique, one point and two point perspective, exploded views, dimensioned views, illustration techniques, computer aided graphics, use of scale. The role of graphics in the design process. Use of graphic techniques to develop and communicate ideas.
Range of modelling techniques and materials:	Scale models, mock-ups, fully crafted prototypes, test models, computer generated models, part product models, simulations, rapid prototyping. Use of appropriate modelling materials such as paper, card, corrugated card, MDF, wire, pipe cleaners, foam, clay, plasticine, balsa wood, expanded foam, sheet plastic, construction kits. The role of modelling in the design process. Application of modelling techniques to develop and communicate ideas.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

This Unit should be based around practical design task(s). Practical activities may range from producing concept sketches on paper, quick modelling of ideas through to production of full-scale prototypes using more traditional craft skills. Centres are encouraged to deliver the Unit using practical activities which interest candidates.

National Unit Specification: support notes (cont)

UNIT Product Design: Developing Design Proposals (Higher)

Centres may wish to carry on from the work undertaken in Unit 1 and use the design specification as a starting point for this Unit. Alternatively, if the specification produced in Unit 1 does not offer sufficient scope for development or this Unit is being taken as a freestanding Unit, centres may need to supply candidates with a specification that offers sufficient opportunity to cover the Outcomes of this Unit.

Centres may choose to cover the three Outcomes with separate tasks but it is recommended that the selected product or situation for this Unit remains the same to encourage and focus the candidate's creative thinking.

Although group work may be used as a learning and teaching approach, any work which contributes to a candidate's folio for assessment must be carried out on an individual basis.

The Course Arrangements give further information on teaching and learning in a Course context. It should be noted that there are areas of content in the Course which are not directly assessed within the Unit but are covered in the external Course assessment.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

This Unit gives candidates experience of practical problem solving activities. Although candidates will develop their knowledge and understanding of techniques to generate and develop ideas, Unit assessment is focused on the practical application of these techniques.

Candidates should gather a folio of work which will provide evidence for all of the Outcomes. The standard to be applied is detailed in the National Assessment Bank item available for the Unit.

SPECIAL NEEDS

This Unit Specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, September, 2003).