

Higher National Unit Specification

General information for centres

Unit title: Product Design: Product Analysis

Unit code: F0MK 34

Unit purpose: This Unit is designed to enable candidates to analyse, research and investigate a given product. Candidates will record, gather and collate relevant information in order to gain a detailed understanding of a product.

On completion of the Unit the candidate should be able to:

- 1 Analyse a given product.
- 2 Identify and describe the manufacturing processes and materials for the given product.
- 3 Identify each component part and explain its function.

Credit points and level: 1 HN Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. Candidates should have an understanding of the design process having completed HN Units in 3D design or have similar qualifications or experience eg DV5W 35 *Art and Design Project*, DV5T 34 *Art and Design: Creative Process*.

Core Skills: There are opportunities to develop the Core Skills of Communication and Information Technology at level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: The Unit could be assessed by a single holistic assessment that would require candidates to generate a report containing visual diagrams and imagery. Alternatively candidates could generate an oral/audio/visual presentation demonstrating all of the knowledge and skills for the three Outcomes in the Unit.

The Outcomes could be assessed separately.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, knowledge and/or skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Analyse a given product

Knowledge and/or skills

- ◆ Research
- ◆ Analysis
- ◆ Design elements
- ◆ Function

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by researching and analysing a given product, showing that they can:

- ◆ identify and research a target audience and market
- ◆ produce visual/photographic evidence of each of the products design elements
- ◆ analyse and describe the product, its function and how it is used

Evidence should be presented as a written/oral/audiovisual presentation.

This Outcome could be assessed by the presentation of the candidate's analysis presented as a report containing visual diagrams and imagery with a minimum of 500 words or equivalent.

Assessment guidelines

Each candidate could keep an annotated sketchbook, folder or work sheets detailing their findings.

Should there be ambiguity regarding candidate evidence, oral questioning should be used.

Recorded evidence in the form of observation checklists, video etc for presentation could be used.

Higher National Unit specification: statement of standards (cont)

Unit title: Product Design: Product Analysis

Outcome 2

Identify and describe the manufacturing processes and materials for the given product

Knowledge and/or skills

- ◆ Manufacturing processes
- ◆ Materials

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can with reference to a given product:

- ◆ correctly identify and describe the manufacturing processes
- ◆ correctly identify and describe materials used
- ◆ assess the suitability of manufacturing processes and materials for purpose

Evidence should be presented as an oral/audiovisual or written presentation.

The oral/audiovisual presentation of a minimum of three minutes duration. A report containing visual diagrams and imagery should be with a minimum of 500 words or equivalent.

Assessment guidelines

Each candidate could keep an annotated sketchbook, folder or separate sheets detailing their findings.

Should there be ambiguity regarding candidate evidence, oral questioning should be used.

Recorded evidence in the form of observation checklists, video etc for presentation could be used.

Outcome 3

Identify each component part and explain its function

Knowledge and/or skills

- ◆ Components
- ◆ Function
- ◆ Assembly

Higher National Unit specification: statement of standards (cont)

Unit title: Product Design: Product Analysis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can with reference to a given product:

- ◆ identify each component
- ◆ explain the function of each component
- ◆ explain of the sequence of assembly

Evidence should be produced as an oral/audio/visual presentation or a report containing visual diagrams and imagery.

Recorded evidence in the form of observation checklists, video etc for presentation could be used.

Assessment guidelines

This Outcome could be assessed by the presentation of the candidate's analysis in a final collated illustrated report of a minimum of 1,500 words or equivalent presentation. Assessment evidence for this Outcome could be presented and assessed with assessment material for all Outcomes.

Should there be ambiguity regarding candidate evidence, oral questioning should be used.

Administrative Information

Unit code: F0MK 34
Unit title: Product Design: Product Analysis
Superclass category: VF
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Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Product Design: Product Analysis

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 is primarily intended to increase candidates' knowledge and awareness of manufacturing processes and materials in the context of production. Candidates should be able to show an awareness of the processes used to assemble a product. The Unit is applicable to those who carry out the design or manufacture of products.

Available technology, literature, publications and other sources should be exploited in the teaching process, helping candidates to source appropriate information.

Outcome 1

Candidates should, through research, investigate a given product in detail. It is intended that candidates will gain an awareness of the factors influencing the product's form and function.

Outcome 2

Candidates should identify which manufacturing processes and materials are used in the production of the product. It is intended that candidates will gain an awareness of how form and function influences the manufacturing processes and materials chosen for a product.

Outcome 3

Candidates should explain how the component parts of the product are assembled and in what sequence. It is intended that candidates will gain an understanding of how and why component parts connect together.

Guidance on the delivery and assessment of this Unit

This Unit has been developed as part of the HND 3D Design Group Award. It is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Opportunities may be taken to link or integrate with other aspects of the course and a thematic approach adopted for both delivery and assessment.

Available technology, literature, publications and other sources should be exploited in the teaching process, helping candidates to source appropriate information.

It is recommended that during the course of this Unit that lectures/seminars are delivered in order for candidates to build a broad knowledge of a range of materials and manufacturing processes. Through Tutor led discussions and group tasks it is intended that candidates will begin to understand the reasons why particular materials and manufacturing process are appropriate for a product.

Higher National Unit specification: support notes (cont)

Unit title: Product Design: Product Analysis

Candidates should be introduced to a number of processes that are used to assemble a range of products. Candidates will then be expected to establish which processes may be most appropriate to assemble a product and in what sequence.

It is recommended that candidates, where possible, be taken on industrial field trips in order to gain an overview of assembly and manufacturing systems. In the event that this is not possible it is recommended that audio-visual material be utilised. Where possible exemplar materials should be available. Candidates could be directed towards specific references, supplemented by handouts.

Tools and equipment should be available to help candidates disassemble the product if appropriate.

The Unit could be assessed Outcome by Outcome or holistically at the end of the Unit.

Information could be gathered in both a visual and written form and kept as a controlled, neat and tidy body of evidence. The process of analysis could be recorded in a sketchbook, folder or on separate sheets.

Should there be ambiguity regarding candidate evidence, oral questioning should be used.

Opportunities for developing Core Skills

Candidates should develop an effective research strategy for analysing, summarising and evaluating current complex information on a product and the processes and materials used in the context of production. Use should be made of a diverse range of sources, including web sites, product literature and other publications and candidates should be advised of appropriate methods, including written, graphic and electronic, to record, reference and organise notes and drafts.

Candidates should be expected to collate and present written and/or oral research materials to standards which would be acceptable in industry. Self assessment checklists may be useful to support communication skills. For the presentation of their research candidates should:

- ◆ select, analyse, collate and present relevant complex information
- ◆ present coherent conclusions
- ◆ structure ideas for impact
- ◆ use accurate spelling and punctuation

In oral presentations they should:

- ◆ adapt language and style to the needs of the audience
- ◆ use appropriate pace and tone
- ◆ use effective non-verbal communication
- ◆ use audio visual support confidently
- ◆ respond to in depth questioning confidently and accurately

Higher National Unit specification: support notes (cont)

Unit title: Product Design: Product Analysis

Open learning

This Unit could be delivered by distance learning. However it would require planning by the centre to ensure sufficiency and authenticity of candidate evidence.

For further information and advice please refer to the SQA document *Assessment and Quality Assurance for Open and Distance Learning* which is available on SQA's website: www.sqa.org.uk.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

Unit title: Product Design: Product Analysis

The Unit will help you to understand why certain materials and manufacturing processes are chosen for a product. You will be asked to analyse a product and research the materials and manufacturing process of that product.

During the delivery of this Unit you will gain knowledge of a variety of manufacturing processes and materials.

You will then be asked to apply this knowledge and explain why the manufacturing processes and materials are suitable for the purpose of the product.

You will also learn how parts of a product are assembled and connect together. You will be required to explain what each of the component parts of the product are and their assembly sequence.

The assessment evidence may be submitted as a report and or oral/audiovisual presentation(s).