

## Higher National Unit Specification

### General information for centres

**Unit title:** Furniture: Materials for Design

**Unit code:** DW75 34

**Unit purpose:** This Unit is designed to enable the candidate to select appropriate materials in the design of an item of furniture. It prepares them for this role by giving them the underpinning knowledge to specify appropriate properties required from a material in a given situation. It encourages them to take an investigative approach. The unit is aimed at candidates who will design objects for manufacture.

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

Analyse the structural and ecological properties in a given subject where only one material is used.

- 1 Analyse the structural and ecological properties in a given subject where only one material is used.
- 2 Analyse the structural and ecological properties in a given subject manufactured from a combination of materials.
- 3 Specify materials for the manufacture of a given subject.

**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 is at the discretion of the centre. Candidates could have existing research and communication skills. These could be demonstrated by Higher Art and/or Product Design. A 3D Design based NQ may be appropriate.

**Core Skills:** There are opportunities to develop the Core Skills of Communication, Numeracy and Problem Solving at SCQF level 6 in this Unit, although there is no automatic certification of core skills or core skills components. Further details are provided in the support notes.

**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 which would require candidates to generate a presentation demonstrating specified properties of materials to be manufactured and assembled to produce a given subject. Alternately, assessment could be Outcome by Outcome.

## 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 the structural and ecological properties in a given subject where only one material is used

#### Knowledge and/or skills

- ◆ Identification of structural properties
- ◆ Description of properties
- ◆ Awareness of ecological factors
- ◆ Analysis

#### Evidence Requirements

Candidates should provide evidence to demonstrate their knowledge/skills by showing that they can:

- Produce a folio of research, annotated with analytical comments and /or drawings. A minimum of five annotated sketches and five items of reference material should be produced. Candidates should be offered a limited range of reference sources from which they should select five images. These should be produced by the class tutor.

#### Assessment guidelines

Details relating to assessment are given under *Outcome 3* below.

### Outcome 2

Analyse the structural and ecological properties in a given subject(s) manufactured from a combination of materials

#### Knowledge and/or skills

- ◆ Joining processes for diverse materials
- ◆ Manufacturing processes
- ◆ Material properties

## **Higher National Unit specification: statement of standards**

**Unit title:** Furniture: Materials for Design

### **Evidence Requirements**

Candidates should provide evidence to demonstrate their knowledge/skills by showing that they can:

- ◆ produce a folio of research and a minimum of five drawings annotated with analytical comments
- ◆ investigate five joining methods
- ◆ explore instances and demonstrate where properties of one material may have a negative effect on the performance of another

Candidates should select five subjects from given options.

### **Assessment guidelines**

Details relating to assessment are given under *Outcome 3* below.

### **Outcome 3**

Specify materials for the manufacture of a given subject(s)

#### **Knowledge and/or skills**

- ◆ Analysis of properties of materials
- ◆ Specification of materials
- ◆ Justification of materials

### **Evidence Requirements**

Candidates should provide evidence to demonstrate their knowledge/skills by showing that they can:

- ◆ provide a folio of research and a minimum of five drawings annotated with analytical comments
- ◆ investigate a minimum of two alternative materials, prior to making selections
- ◆ justify the specifications made for materials for given subject(s)

### **Assessment guidelines**

Assessment evidence could be generated through class work or private study as appropriate for the selected assessment method.

## **Administrative Information**

<b>Unit code:</b>	DW75 34
<b>Unit title:</b>	Furniture: Materials for Design
<b>Superclass category:</b>	JP
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## **Higher National Unit specification: support notes**

### **Unit title:** Furniture: Materials for Design

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 prepare candidates to specify materials for a given subject in advance of manufacture, by giving them the underpinning knowledge and skills. Candidates will be able to make selections taking into account the general, structural and ecological effects of the materials throughout the lifespan of the subject. The Unit is applicable to those who carry out design or manufacturing projects.

Where possible, the teaching environment could include actual examples of materials being discussed, either as samples or as manufactured products.

Available technology could be exploited in the teaching process, helping candidates to source appropriate information.

Although the Unit is expressed in generic terms, it should be related to a context which is appropriate for candidates.

This Unit forms an introduction to the process of analysing and specifying a material. One approach could be to require the candidate to identify the reasons why particular materials were used. Two objects eg an Arts and Crafts chair and a Pantone chair could be compared. The properties of timber and plastic could be examined. This exploration could include structural properties and an overview of the appropriate manufacturing processes. Candidates could be directed towards specific references, supplemented by handouts. The origin of material, its preparation and disposal, could all be considered in terms of environmental impact.

### **Guidance on the delivery and assessment of this Unit**

The Unit has been developed as part of the 3D Design Group Award. The Unit could be integrated with a design unit, or alternatively, stand alone. The unit should be delivered early in the course in order that the skills and knowledge acquired could underpin later Units.

The Unit could be assessed by a single holistic instrument of assessment which would require candidates to produce a presentation in the form of either an illustrated report of not less than a thousand words or an illustrated oral presentation of not less than ten minutes. In either case, information graphics such as an interaction matrix could be used to convey details. Candidates could be encouraged to include material samples or brochures to demonstrate active investigation. Visuals such as exploded drawings could be employed to explain the effects of the proposed combination(s) of materials.

## **Higher National Unit specification: support notes (cont)**

**Unit title:** Furniture: Materials for Design

### ***Opportunities for developing Core Skills***

All elements of the core skill of Problem Solving, that is, planning and organising, critical thinking, and reviewing and evaluating, should be developed and enhanced as candidates undertake the Unit. Candidates have to analyse materials' properties and justify a design solution. Researching and assessing the importance all factors impacting on selection of materials will involve a high level of critical thinking. Applying knowledge and understanding of structural properties would necessarily require accuracy and detailed calculation with consideration of all significant factors. Justifying proposed decisions will allow on-going opportunities for review and modification. Candidates may benefit from personal interviews with the assessor to reinforce analytical and evaluative approaches to working practice.

Candidates should be encouraged to develop techniques for accessing, reading and evaluating a range of complex sources of information. Instruction in the effective use of use of learning resources will allow candidates to effectively access appropriate books and web based data. Candidates need to be familiar with appropriate methods, which could be computer or paper based, to record, reference and organise appropriate material. Checklists or support notes could be provided to encourage systematic analysis and evaluation of information. Although skills in communication are not formally assessed candidates should express essential ideas and information concisely and coherently using accurate spelling and punctuation in written responses.

### **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 information on open learning arrangements, please refer to the SQA guide *Assessment and Quality Assurance of Open and Distance Learning* (SQA 2000)

### **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. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: **[www.sqa.org.uk](http://www.sqa.org.uk)**.

## **General information for candidates**

### **Unit title:** Furniture: Materials for Design

This Unit is designed to enable you to select materials for particular applications. You will be asked to identify how particular materials perform in a given situation. Through this you will learn what to look for in a material, and be made aware of the environmental impact of materials.

You will then examine applications where multiple materials are used. You will also be made aware that in some situations steps have to be taken to prevent one material from damaging another. An example of this might be where a metal fixing is located through glass. A rubberised material is often used to absorb the movement in the structure, keeping the metal away from the glass edge.

Throughout these exercises you will gather reference materials which may form the core of your own reference library.

When you have gained some knowledge you will be asked to apply that knowledge. You will be invited to identify what may be required from materials in a specific situation(s). You will then produce a presentation explaining the properties of your chosen materials and your reason for selecting them.

You will complete either a report or an oral presentation. In either case, the assessment will take place at the end of the unit. Assessment evidence will be gathered during both class time and private study time.