

# Craft and Design

## Design Assignment Guidance for Intermediate 2

For use in National Qualifications Intermediate 2 Courses in and after 2003

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## Introduction

This document details the assessment criteria, parameters and marking schedule of the Intermediate 2 Design Assignment. To help candidates prepare appropriate material, the document also offers guidance on the nature, scope and presentation of work required for a Design Assignment.

This document must be used in conjunction with the *Craft and Design, Intermediate 2* (December 1999), Arrangements document. Reference should also be made to the SQA annually published *Conditions and Arrangements and Guidance on generating evidence for National Course Estimates and Assessment Appeals* documents.

This document supersedes *Craft and Design, Design Assignment Guidance, Intermediate 2*, published by SQA in September 2002.

## Intermediate 2 Craft and Design Course

The Intermediate 2 Course has been designed to introduce candidates to the world of both the designer and the manufacturer. This is done by making candidates aware of design factors from a consumer's point of view.

In the Course, candidates look at the design process and the strategic decisions that have to be made, as well as considering the materials that may be used and manufacturing processes undertaken. The knowledge and understanding acquired is consolidated by undertaking practical design activities.

The external assessment of the Intermediate 2 Craft and Design Course consists of:

- ◆ An examination paper testing candidates' knowledge and understanding of the content of the Course. The examination paper is of two hours duration and is allocated 60 marks of the total 150 marks available for external assessment.
- ◆ A Design Assignment folio which develops a solution from a design brief. The Design Assignment is allocated 90 marks of the total 150 marks available for external assessment.

Further information on the specifications content and context can be obtained in the Intermediate 2 Craft and Design Course Arrangements document.

## Design Assignment 'Topics' for Session 2003/2004

Centres have already been advised that for session 2003/2004, candidates must choose **one** of the following three topics for their Design Assignment:

- ◆ The Kitchen
- ◆ Japan
- ◆ Lighting

All material presented in individual Design Assignments **must** be a candidate's own work. Candidates may individually select a topic, or be directed as a 'whole class' to a topic. If a 'whole class' approach is adopted however, special care must be taken to ensure that **all material presented in individual Design Assignments is entirely the candidate's own work.**

Please note that candidate's must select a Design Assignment product that is suited to **commercial manufacture**, and not a school workshop manufacture.

**Design Assignments must be submitted to the SQA by 30 April for marking.**

## **Relationship with Units**

It is acceptable for Unit work (based on the same topic) to be used in the Design Assignment and vice versa. Integrated assessment encourages work at Unit level to be taken forward and enhanced for presentation in the Design Assignment. It also allows for Design Assignment work to be used for the assessment or re-assessment of any outstanding Unit work.

Design Assignment material used for Unit assessments **must** be marked in accordance with the criteria given 'Marking Guidelines' of the relevant NAB, and in accordance with cut-off scores.

If a candidate uses the same piece work for both Unit and Course evidence, the original should be submitted with the Design Assignment with photocopies being retained for Unit moderation purposes.

To gain a Course award, candidates must pass both internal Unit and external Course assessments. Furthermore, it should be noted that a well-presented Design Assignment folio does not necessarily mean that all the assessment criteria of NABs have been met.

## **Conduct of Assessment**

The responsibility for setting annual 'topics' lies with SQA. Completion of Design Assignments must be carried out under controlled conditions within centres. This must be adhered to for two reasons:

- ◆ candidate work must be authenticated
- ◆ as an external assessment, the integrity of the Design Assignment must be guaranteed

As a component of the external assessment, work produced for the Design Assignment must be produced by candidates working independently. While appropriate advice and guidance may be given by the teacher/lecturer, candidates are entirely responsible for producing their own Design Assignments.

No annotations should be made on a Design Assignment by anyone other than the candidate preparing the folio. Design Assignments must remain in centres before being submitted to SQA for assessment purposes. Candidates must not be allowed to remove their Design Assignments from centres prior to assessment being carried out. Throughout the production of Design Assignments, candidates must store their work securely within the centre in a manner which ensures that the quality of material is not allowed to deteriorate or be damaged in any way.

## **Structure of the Design Assignment**

A typical Intermediate 2 Design Assignment should contain between 17–24 pages (A3 preferred). A separate flyleaf, which, must be used to authenticate the candidates work, will be made available to centres. The flyleaf must be used by candidates to reference the page numbers of their Design Assignment folios against the relevant Parts of the Design Assignment Guidance.

There is no need to include a separate contents page or use presentation graphics other than those which attract marks under the relevant Sections.

## Allocation of Marks

The allocation of marks and recommended number of (A3) pages is as follows:

Section	Marks	Recommended number of pages
1. Problem Analysis and Specification	20	6 – 7 pages
2. Generation of Ideas	20	2 – 4 pages
3. Development and Synthesis	24	5 – 6 pages
4. Modelling	5	1 page
5. Outline Planning for Manufacture	17	3 – 5 pages
6. Evaluation	4	1 page
<b>Total</b>	<b>90 marks</b>	<b>17 –24 pages</b>

## Candidate Evidence

Candidates should be familiar with the assessment criteria and guidance offered for each Section of the Design Assignment. **There is no restriction on copying this document for candidates.**

The purpose of the Guidance Note attached to each Part is to provide useful and relevant information for the benefit of candidates. It is recommended that candidates refer to the guidance notes when producing their Design Assignments. Centres may include additional guidance for candidates as appropriate.

## Section 1 — Problem Analysis and Specification

Available marks: 20

Recommended number of pages: 6 – 7

Candidates must carry out a thorough analysis and investigation, culminating in the production of a design specification. Candidates should clearly **state the chosen topic from those supplied by SQA**. Candidates must:

**(a) State the problem and target user** **2 marks**

Guidance note — It is expected that the work for this Part will consist of up to one page of material. One mark will be awarded for a clear statement of the problem and one mark for clearly identifying the target user.

**(b) Identify three key design factors related to the topic or problem and explain their relevance** **3 marks**

Guidance note — It is expected that the work for this Part will consist of one page of material. One mark will be awarded for each statement which shows why a factor is relevant and justified to the topic or problem. **Simply including a factor without an explanation will not attract marks**, as the candidate must demonstrate knowledge of why the factor is relevant to either the topic or the problem. Candidates will not be disadvantaged for identifying more than three factors.

Candidates may find it useful to consider factors such as primary and secondary function(s), choice of materials, durability, value for money, ease of maintenance, running costs, aesthetics, ergonomics, environmental concerns, safety etc.

**(c) Investigate the design factors identified in relation to the topic or problem** **9 marks**

Guidance note — It is expected that the work for this Part will consist of three to four pages of material. Investigation of the three design factors identified in (b) above will normally attract three marks per factor, however, candidates may wish to research one individual factor in some detail, if it is considered that it has greater relevance, and credit will be given for this.

The investigation should be a gathering and presentation exercise of information about the factors which are relevant to the problem or topic area stated in Part (a) above. Included information **must** be annotated or highlighted to justify the relevance of its inclusion.

Material should be obtained from sources such as consumer and trade magazines, professional journals, anthropometric data tables, internet sites, technical literature etc. The information need not be original material and is likely to include photocopies or downloads from the internet. **This should not be a time consuming exercise** and the included material should be relevant to the three identified factors. Marks will be awarded for selecting and highlighting appropriate information rather than defining a given term. Candidates may choose to evaluate similar products prior to producing their own ideas and concepts.

**(d) Produce a design specification** **6 marks**

Guidance note — It is expected that the work for this Part will consist of one page of material. Candidates should produce a series of statements which define what the design must achieve. This should draw on the work from Parts (a) and (c) above. One mark will be awarded for each relevant statement. Vague or general statements unrelated to the problem will not attract marks.

## Section 2 — Generation of Ideas

**Available marks: 20**

**Recommended number of pages: 2 – 4**

It is expected that the evidence for Parts (b) and (c) will be contained within the two to four pages of work for Part (a).

In generating ideas, **candidates must continually make reference to the design specification.** Candidates must:

**(a) Generate a variety of initial ideas** **12 marks**

Guidance note — It is expected that the work for this Part will consist of two to four pages of material. Candidates could produce six **initial** ideas which are simple or three which are more detailed. Candidates should **keep all ideas rough and simple at this stage** and leave scope for development in Section 3. Effective use of idea generation techniques may help produce a range of varied and different ideas.

Candidates should convey their ideas by using annotated sketches and diagrams as appropriate. To score well, the variety of ideas must be diverse, distinct from each other and not simply a cosmetic change from a previous idea.

**(b) Reference ideas against the design specification** **3 marks**

Guidance note — Candidates should show that the design specification has been referred to on **at least three** separate occasions. This should be conveyed via annotations on the sketches. One mark will be awarded for each appropriate reference to the design specification. For clarity, references to the specification should be highlighted or underlined. Repetition will not be awarded further marks.

**(c) Produce appropriate graphics** **5 marks**

Guidance note — Marks will be awarded for the quality and use of graphics in the two to four pages of this Section. Candidates should consider the use of colour, line, texture, tone, shape, form etc, in the sketching and rendering of their ideas.

### Section 3 — Development and Synthesis

Available marks: 24

Recommended number of pages: 4 – 6

Candidates must demonstrate that detailed consideration has been given to the initial ideas generated. Candidates must:

**(a) Evaluate initial ideas against the design specification** **3 marks**

Guidance note — It is expected that the work for this Part will consist of one page of material. Candidates must provide three **valid** statements which show evaluation against the design specification. Candidates may find it useful to summarise information using a table or grid to support their concluding statements.

**(b) Develop ideas** **8 marks**

Guidance note — It is expected that the work for this Part will consist of two to three pages. Candidates should develop the best ideas based on the evaluation in Part (a) above. An example of work may include two ideas with four significant changes of improvements. Candidates may choose to develop more or less ideas. It should be noted that choosing to develop a greater number of ideas may result in candidates having to spend more time and carry out further work during the synthesis stage. Candidates should cover areas such as how it looks, how it is used, how it is made, what it is made from etc. One mark will be awarded for each **significant** change, improvement or development.

**(c) Synthesise the best aspects of developed ideas towards a solution** **8 marks**

Guidance note — It is expected that the work for this Part will consist of one to two pages. Synthesis is **the bringing together of the best aspects** of the ideas developed in Part (b) above. Candidates should highlight or reference which aspects of the developed ideas they have chosen or combined in their final solution. Candidates who have used clear referencing techniques, and who can show clear pathways of how and where developed ideas have been synthesized in the final solution, are likely to score well.

Candidates must consider the advantages and disadvantages of standard components, materials, methods of manufacture, mechanisms, finish etc. Candidates should synthesise **at least eight aspects**, and one mark will be awarded for each.

**(d) Use graphics to present the proposed solution** **5 marks**

Guidance note — The graphics in this Section must include a presentation drawing which communicates the main visual features of the proposed solution. Candidates should consider the use of colour, line, texture, shape and form in the sketching and rendering of their solution.

## Section 4 — Modelling

Available marks: 5

Recommended number of pages: 1

Candidates must use modelling techniques **in at least one stage of the design process** and demonstrate results. Candidates must:

**(a) Describe where and why a model(s) was used in the design process** **2 marks**

Guidance note — Candidates must describe the reason they chose to create a model at a specific stage and why it was appropriate to do so at that time. The description must be specifically related to the product, or part of the product, which is being modelled, and cannot be a general definition of the purpose of modelling. Modelling of the entire product, or a component part of the product, is acceptable.

**(b) Explain what information was derived as a result of modelling** **2 marks**

Guidance note — Candidates should include a range of valid statements that describe the results obtained during modelling.

**(c) Show evidence of modelling** **1 marks**

Guidance note — Evidence of modelling is likely to include photographs or printed material, sketches or computer generated 3D solid modelling evidence. Evidence may be annotated or highlighted to convey the information required in Parts (a) and (b). **Actual models must not be included.**

## Section 5 — Outline Planning for Manufacture

Available marks: 17

Recommended number of pages: 3 – 5

Candidates must plan for the **commercial manufacture** of the product. In this Section, commercial manufacture is defined as **the process by which a product is produced in quantity, in a commercial environment.**

Planning for a one-off production takes place in the Product Model Unit and does not attract marks in Part (a).

It is expected that the work for Parts (a), (b) and (c) will be three to five pages of material. Candidates must:

**(a) Present information for commercial manufacture** **6 marks**

Guidance note — Candidates should identify all materials, joining methods, assembly methods, manufacturing and assembly sequences, appropriate and relevant industrial processes, finishes etc, which would convey sufficient information and detail to clearly explain how the product would be commercially or industrially manufactured. Marks will be awarded for relevant pieces of information. Planning for a one-off production is not acceptable and will not attract marks.

**(b) Produce a working drawing and associated parts list** **6 marks**

Guidance note — The marks in this Part are for the information contained within both the working drawing and the associated parts list. The working drawing must take the form of either an orthographic, General Arrangement drawing showing the overall dimensions, or a pictorial drawing showing overall dimensions. The parts list may take the form of either a separate list or annotations on the working drawing itself.

**(c) Demonstrate quality of draughting** **5 marks**

Guidance note — Drawings must be produced either manually (with instruments) or by computer. Marks awarded will depend on the quality and accuracy of draughting produced in the working drawing in Part (b). The quality and accuracy of drawing relates to line quality, position of views, dimensioning, scale, recognised drawing conventions etc.

**Section 6 — Evaluation**

**Available marks: 4**

**Recommended number of pages: 1**

Candidates must evaluate the design solution. Candidates must:

**(a) Justify a proposed solution**

**4 marks**

Guidance note — It is expected that the work for this Part will consist of one page of material. Candidates should summarise and justify their proposed solution. There should be clear evidence that the proposed solution satisfies the design specification, for example by use of a table or grid comparing the proposed solution with the design specification. A mark will be awarded for each relevant point which is justified.

