



## Course Report 2016

Subject	Design and Manufacture
Level	Advanced Higher

The statistics used in this report have been compiled before the completion of any Post Results Services.

This report provides information on the performance of candidates which it is hoped will be useful to teachers, lecturers and assessors in their preparation of candidates for future assessment. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published assessment documents and marking instructions.

# Section 1: Comments on the Assessment

## Component 1: question paper

The question paper consisted of two sections totalling 80 marks, and was structured in the same way as the published specimen question paper (SQP) and exemplar question paper (EQP), with each question in both Section 1 and Section 2 requiring extended responses to provide detailed descriptions or explanations.

It performed in line with expectations, and feedback from the marking team suggested that it was fair in terms of course coverage and overall level of demand.

## Component 2: Assignment

The Assignment for Advanced Higher Design and Manufacture was allocated a total of 120 marks. Candidates are allowed to choose their own task.

# Section 2: Comments on candidate performance

## Areas in which candidates performed well

### Component 1: question paper

Candidates generally performed well in the following questions:

#### Question 1

**(b)** This was answered well by some candidates. Candidates displayed a reasonable knowledge of how computers are used in the manufacture of products and their impact on the manufacturing industry. However, much of the information used to construct their answer was based on general knowledge and not detailed knowledge developed throughout the Advanced Higher course.

**(c)** Most candidates attempted this question and displayed a good understanding of why marketing has become an essential activity in a global market. The explanation provided by stronger candidates offered suitable examples of products, brands or companies. Explanations were constructed around increased competition, raising awareness and communication.

#### Question 2

**(b)** Many candidates successfully identified appropriate techniques for communication between the people identified. They also provided basic reasons as to why these would be suitable. However, few candidates provided the required detail to achieve the top banding for this question. When answering these types of questions candidates must avoid repetition or overlap in their explanations.

#### Question 3

**(a)** Most candidates provided suitably detailed answers that clearly referenced the Sleek Dive light when explaining why selected materials were suitable.

**(b)** Most candidates demonstrated a reasonable knowledge of assembly features used to aid assembly. Candidates chose to base their answer around features used to locate, place and fix components and parts together, or the features of flat pack furniture that eases self-assembly. Candidates who provided sketches as part of their answer, and used a number of products, tended to gain more marks in this question.

#### **Question 4**

**(b)** Most candidates provided general explanation as to the risks associated with launch in new products. However, they struggled to provide the level of detail to gain more than half marks in this question.

#### **Question 5**

**(a)** Most candidates answered this question and provided a clear description as to how ergonomics and the conditions of use could have influenced The Shield Extinguisher.

**(b)** Most candidates answered this question but their descriptions lacked the detail to achieve more than half marks.

### **Component 2: Assignment**

**Project planning:** Most candidates produced clear project plans, with many of them following the same structure as that in the exemplars issued by SQA.

**Applying graphic techniques to inform and communicate design decisions:** A significant number of candidates demonstrated a very high level of skill in their application of graphics.

## **Areas which candidates found demanding**

### **Component 1: question paper**

Candidates had difficulty with the following questions:

#### **Question 1**

**(a)** Surprisingly few candidates scored well in this question. It was designed to be accessible to all candidates and most were expected to achieve the middle banding or above. The knowledge required should have been easily accessible through the unit work, and has been highlighted in exemplar and specimen papers. Most candidates did not respond to the question asked or identify a design movement. Instead they launched into a historical account, outlining the evolution of a product they had studied during their course work. This was not what the question asked and unfortunately resulted in many candidates scoring 0 for this question. Many candidates appear not to have studied a design movement or know what a design movement is.

**d)** Most candidates appear not to have read this question properly. They failed to explain in their answer why ergonomics has become so influential in the evolution of products. Instead, they provided a very general description of what ergonomic issues had been considered during the design of a product.

(e) Most candidates struggled to provide suitable information in order to explain the opportunities created by changes in fashion or how this influences the products they produce.

### **Question 2**

(a) Many candidates struggled to provide a suitable level of detail or consider a range of techniques the designer could have used in their answer. Candidates must ensure that they pay attention to the command word in the question. Marks were awarded for this question for the quality of their description. Too many candidates did little more than identify techniques. Many candidates did not respond to the question asked. 'Designer' was highlighted in bold, but many candidates overlooked this and described techniques used by manufacturers which would not be available to the designer.

(b) Many candidates did not pay attention to the command word in this question. This resulted in candidates describing techniques rather than explaining why the techniques are suitable.

### **Question 3**

c) Many candidates did not respond to the question asked, and provided a stock type answer that described 3D-printing instead of describing the advantages offered over traditional methods.

### **Question 4**

(a) Many candidates did not respond to the question asked, and provided a good description of technology push and consumer pull, instead of describing the benefits of the two different approaches asked for in the question.

### **Question 6**

(a) Many candidates did not respond to the question asked, and instead provided a general description of the information gained from questionnaires and user trips. Candidates appeared to have a very limited knowledge or understanding of the key stages required to ensure appropriate information is gained.

## **Component 2: Assignment**

**Generating and developing ideas towards a design proposal:** A significant number of candidates demonstrated very little skill in the development of their ideas. Development was often very superficial and lacked any evidence of the application of knowledge or understanding of key areas of the course, such as materials and manufacturing processes or design issues.

**Applying modelling techniques to inform and communicate design decisions:** A significant number of candidates made little or no use of modelling. Models were often tokenistic and lacked purpose.

**Applying knowledge and understanding of materials and manufacturing processes:** A large number of candidates demonstrated very little knowledge of materials and processes at the level required for Advanced Higher. This had a direct impact on the development of their proposal.

**Applying knowledge and understanding of design issues:** A large number of candidates demonstrated very little knowledge of design issues at the level required for Advanced Higher. Again, this had a direct impact on the development of their proposal.

## **Section 3: Advice for the preparation of future candidates**

### **Component 1: question paper**

Assessors are advised to use the exemplar materials (for example, specimen/exemplar question papers and marking instructions) which are available on the SQA website, when preparing candidates for the examination. Preparation for the question paper could also include practise in examination techniques and preparation of model answers.

Many candidates are not *describing* or *explaining* their answers in sufficient detail for a question paper at Advanced Higher level. Candidates will continue to struggle to produce extended answers in the question paper if they have not been used to doing this in class.

Much of the additional knowledge and understanding required to answer the question paper is gained directly from the candidates' unit work. Candidates should ensure they use the full amount of allocated time to undertake each unit. Assessors must ensure the learning that should have taken place is clear and explicit. Past papers and specimen papers should be used at critical points in the course to reinforce the learning that should have been gained from undertaking each of the units. The focus should be more on learning and less on doing.

Candidates must avoid rushing through units. It is not the completion of the unit-work that will provide success in the exam — it is the quality of the learning experience.

Candidates must be provided with the opportunity to gain more detailed knowledge about each of the assessable elements of the course and raise their knowledge and understanding to Advanced Higher level. Too much general knowledge and personal opinion is being used to construct and develop extended answers. Depth of understanding is key to constructing an Advanced Higher answer. Unfortunately, many candidates are not raising their knowledge and understanding beyond Higher level.

This report has highlighted candidates' failure to read questions properly and tendency to ignore the command words in the question. However, many candidates simply had not gained the depth of knowledge required to provide clear explanations and detailed descriptions. Both exam practice and greater focus on the learning expected from each unit is key to improving the quality of exam responses.

Candidates must be provided with the opportunity to familiarise themselves with products. The product evolution and analysis units should provide the candidate with a range of products that they have gained detailed knowledge about. It is these products that should be used to provide detail or examples in the written paper. Too many candidates are not referencing the unit work in their written responses. Too much general knowledge about products such as the iPhone and iPod is used to answer questions in the written paper.

Candidates' knowledge of commercial manufacture appears to be very generic and lacking detail or factual information. Candidates must avoid making generalisations and must undertake activities to investigate the commercial manufacture of a number of different products.

In addition, candidates should consider the mark allocation for individual questions when producing a response. Marks for explanations and descriptions are awarded for the quality and detail contained in the response and not always for the number of valid points made in the answer.

The Course Assessment Specification contains a section titled *Further mandatory information on course coverage*. This section lists all the available areas of sampling for production of the question paper. Assessors are advised to familiarise themselves with the mandatory content to prepare candidates to respond to these areas of questioning.

### **Component 2: Assignment**

A significant number of candidates undertook tasks that were very restricted and did not allow them to generate strong evidence of the assessable skills. Assessors should provide advice on the suitability of tasks.

Candidates must be prepared with the skills and knowledge at an Advanced Higher level in order to apply them in the assignment.

Centres are advised to refer to the SQA Understanding Standards packs available on SQA's secure site.

## Grade Boundary and Statistical information:

### Statistical information: update on Courses

Number of resulted entries in 2015	0
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Number of resulted entries in 2016	70
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### Statistical information: Performance of candidates

#### Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark -				
A	1.4%	1.4%	1	147
B	12.9%	14.3%	9	127
C	34.3%	48.6%	24	107
D	10.0%	58.6%	7	97
No award	41.4%	-	29	0

## General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.