



Course Report 2017

Subject	Design and Manufacture
Level	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

Summary of the course assessment

Component 1: assignment

The assignment for Higher Design and Manufacture is allocated a total of 70 marks. A bank of Course Assessment Tasks is set by SQA, assessed by centres, and subject to external verification by SQA. All tasks performed well and allowed candidates to access full marks. All tasks also generated a wide range of responses and marks.

Component 2: question paper

The question paper consists of two sections totalling 70 marks and is structured in the same way as previous papers and the published specimen question paper (SQP). The question paper samples both units and incorporates a mixture of short response and extended response type questions.

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

Section 2: Comments on candidate performance

Areas in which candidates performed well

Component 1: assignment

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| Section 1 | Generating Ideas: Candidates generally produced good evidence. |
| Section 3 | Applying Graphic Techniques: Large number of candidates produced very good evidence. |
| Section 4 | Applying Modelling Techniques: A number of candidates produced good evidence. |

Component 2: question paper

Candidates generally performed well in these questions:

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| Question 1(a) | Answered well by most candidates. Candidates should avoid duplication and explain six different properties/characteristics of the materials given. The answers should be appropriate to the products. There is no |
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requirement for candidates to cover materials from both products in the answer.

- Question 1(b) Answered well by most candidates. Candidates were given credit where a correct explanation was given to an incorrect process. There is no requirement for candidates to cover both products in the answer.
- Question 1(c) Answered well by some candidates.
- Question 1(d) Answered quite well by candidates. Some candidates struggled to answer for all three areas of ergonomics.
- Question 1(e) Answered well by most candidates.
- Question 2(a) Answered well by most candidates.
- Question 2(b) Answered well by most candidates. Some candidates did not provide descriptions on how the research would be carried out and were therefore not awarded marks.
- Question 2(c) Answered well by most candidates. Some candidates did not understand the purpose of a marketing or technical specification and could not therefore give an example of the type of information provided.
- Question 4 Answered well by most candidates.
- Question 5(a) Answered well by most candidates. Some candidates gave generic answers such as 'durable' and 'available in a range of colours' which did not attract marks.
- Question 5(c) Answered well, though some answers were generic and not specific to the product.

Areas which candidates found demanding

Component 1: assignment

A significant number of candidates carried out very little exploration or refinement, simply making very minor changes to one of their initial ideas. This impacted on marks for Sections 2-6.

- Section 2: Exploring and Refining Ideas. A significant number of candidates simply described how they were going to make one of the initial ideas and carried out very little exploration or refinement. There was often little or no reference to the Design Information Record (DIR).

- Section 3: Applying Graphic Techniques. Although a significant number of candidates demonstrated excellent graphic skills, the range was often limited because very little exploration and refinement had taken place.
- Section 4: Applying Modelling Techniques. Although there was improvement in this section, demonstration of modelling skills was still often limited because very little exploration and refinement had taken place. A large number of candidates produced models that were superficial and did nothing to advance the proposal.
- Section 5: Applying Materials and Processes. There was often very superficial application of knowledge of materials and processes.
- Section 6: Applying Knowledge and Understanding of Design Issues. There was often very superficial application of knowledge of design issues. Again, there was often no reference to the DIR.

Component 2: question paper

Candidates had difficulty with these questions:

- Question 3 Some candidates partly answered the question based on the environment that the stool was used in. This type of response was not awarded marks.
- Question 5(b) Answered poorly. Candidates displayed a lack of knowledge in this area.
- Question 5(d) Answered poorly. Candidates struggled to refer to four different aesthetic aspects in their answer.
- Question 6(a) Answered poorly. Many candidates gave a brief explanation of what a composite material is. However, they did not reference products or explain clear advantages of composite materials in their answer.
- Question 7 This question was answered quite poorly. It was designed to assess candidates' understanding of all aspects of production methods and planning systems, and how they could be used to improve efficiency. There was a wide range of responses to this question. Some candidates managed to answer well using good examples to illustrate their points. However, many candidates struggled to stay focused on production methods and planning systems and, so the points made were very generic in nature and did not demonstrate clear understanding.

Section 3: Advice for the preparation of future candidates

Component 1: assignment

The Design Information Record (DIR) should be completed by candidates before they undertake the task. The information on the DIR provides much of the direction for the exploration and refinement of the proposal.

Candidates should apply the skills they have gained in the units. In particular, they should:

- ◆ Use idea generation techniques to ensure that they access full marks in Section 1.
- ◆ Be able to explore and refine ideas. In doing so they will require to apply modelling and graphic techniques and knowledge of materials, processes and design issues, resulting in enhanced marks for Sections 2–6.

Component 2: question paper

- ◆ Assessors are advised to use the exemplar materials (for example, specimen/past question papers and marking instructions) which are available on the SQA website, when preparing candidates for the examination.
- ◆ Preparation for the question paper should also include training in examination techniques and in producing acceptable responses to questions.
- ◆ Many candidates are not *describing* or *explaining* their answers in sufficient detail for a question paper at 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.
- ◆ Candidates should be encouraged to discuss and debate to enable them to acquire a technical vocabulary that will enable them to produce acceptable answers to questions in the question paper.
- ◆ In addition, candidates should consider the mark allocation for individual questions when producing a response. A four-mark question is generally looking for four correct statements to be provided to achieve full marks.
- ◆ 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.
- ◆ Exemplification of Higher candidate responses can be found on the Understanding Standards section of the secure website.

Whilst it was pleasing to see that the conditions of assessment for coursework were adhered to in the majority of centres, there were a small number of examples where this may not have been the case. Following feedback from teachers, we have strengthened the conditions of assessment criteria for National 5 subjects and will do so for Higher and

Advanced Higher. The criteria are published clearly on our website and in course materials and must be adhered to. SQA takes very seriously its obligation to ensure fairness and equity for all candidates in all qualifications through consistent application of assessment conditions and investigates all cases alerted to us where conditions may not have been met.

Grade Boundary and Statistical information:

Statistical information: update on Courses

Number of resulted entries in 2016	3078
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Number of resulted entries in 2017	3021
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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	14.1%	14.1%	425	103
B	23.6%	37.7%	713	89
C	26.3%	64.0%	796	75
D	12.4%	76.5%	376	68
No award	23.5%	-	711	-

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.