



Course report 2019

Subject	Design and Manufacture
Level	Advanced Higher

This report provides information on candidates' performance. Teachers, lecturers and assessors may find it useful when preparing candidates for future assessment. The report 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.

The statistics used in this report have been compiled before the completion of any post-results services.

Section 1: comments on the assessment

Project

There was no change to the assignment and it performed as expected, giving candidates full opportunity to demonstrate the skills, knowledge and understanding they had gained in the course. A wide range of evidence was generated and all assignments which were verified had been fully completed.

Question paper

The question paper generally performed in line with expectations. Feedback from the marking team suggested that the question paper was fair in terms of course coverage and overall level of demand. However, omitting a bulleted list from question 1(a) and the wording used in questions 1(e) and 5(c) affected candidates' ability to access the full range of marks. This was taken into account and the grade boundary was adjusted.

Section 2: comments on candidate performance

Areas that candidates performed well in

Project

Candidates generally produced good evidence for 'section 1: generating ideas'.

A large number of candidates produced very good evidence for 'section 3: applying graphic techniques'.

Candidates generally identified a valid design opportunity. A number of candidates carried out very strong research, gaining full marks in this section. Identifying a valid design opportunity and strong research generally lead to a good overall assignment.

Question paper

Candidates answered the following questions well:

Question 1(c). The majority of candidates demonstrated a good knowledge and understanding of reasons for commercial failure and made good reference to changes to products during their evolution.

Question 2(a). The majority of candidates demonstrated a good knowledge and understanding of issues that influence the choice of materials when designing and manufacturing products.

Question 2(b). The majority of candidates demonstrated a good knowledge and understanding of the differences between vacuum-forming and injection-moulding when explaining why the sled legs were vacuum-formed instead of injection-moulded.

Question 3(c). The majority of candidates described a strategy that was appropriate to the product and the intended target market and included more than a generic advertising method.

Question 4(c). The majority of candidates demonstrated a good knowledge and understanding of methods that can be used at different stages to monitor and ensure the quality of a product's manufacture.

Areas that candidates found demanding

Project

Section 4: applying modelling techniques

Although there was continued improvement in this section, demonstration of modelling skills was often still limited because very little exploration and refinement had taken place. A large number of candidates produced models which were superficial and did not advance the proposal. There was often no indication of the purpose of the model or what had been learned from it.

Question paper

Question 1(a) was attempted by most candidates. However, the majority of candidates struggled to gain more than 4 marks. Many candidates ignored the focus of the question and responded with a lengthy and repetitive description of the evolution of a product, with limited reference to materials, manufacture or external factors. Many of the products referenced in this question appeared not to have been studied as part of the course as candidates had no depth of knowledge and understanding of how these products had evolved.

Question 1(b) Few candidates referred to specific new and emerging technologies. Candidates tended to describe technical products or a technology rather than describing the **impact** of the technologies on products. Candidates reverted to talking about products not studied in the course, for example their mobile phone.

Question 1(d) was attempted by most candidates. Some candidates misread the question and did not focus their answer on the positive and negative impacts on society of **one** product, instead referencing a range of products that exemplified positive and negative impacts on society. This did not provide the depth of knowledge required at this level.

Question 1(e) was attempted by most candidates. Candidates misread this question and provided a very limited description of a number of design movements rather than describing the features and characteristics of **one** design movement.

Question 1(f) Candidates struggled to provide a response that demonstrated the depth of understanding required at this level. Candidates defaulted to describing the three aspects of ergonomics — anthropometrics, psychology and physiology — with limited reference to a product or products.

Question 3(a) Candidates appeared to have misread the question, describing the information gained from expert appraisals and user trips rather than applying their knowledge to describe how the information would have influenced the product used in the question.

Question 5(c) Candidates tended to list two or three methods to protect intellectual property rights with a brief description of each. The question asked candidates to identify **one** method and outline its key features. Making 'one' bold may have made this clearer.

Section 3: preparing candidates for future assessment

Project

The general quality of work verified this year showed good improvement. This was largely because candidates had identified appropriate design opportunities. Centres should continue to give clear advice to candidates on the suitability of their design opportunity.

Centres should encourage candidates to plan the pace of the assignment so that they do not run out of time.

Centres should consider the starting point for the assignment to ensure that there is a balance between candidates having the appropriate skills, knowledge and understanding, and time and energy to complete it.

Question paper

Preparation for the question paper requires more than revision. Skills, knowledge and understanding need to be developed throughout the course. Centres should provide candidates with a range of opportunities during the course to improve their ability to respond to the question paper.

Candidates must investigate and analyse a range of products during the course to provide detail or examples when responding to the question paper.

When answering questions in the question paper it is important that candidates:

- ◆ read questions fully before attempting to answer them
- ◆ plan their answers to cover what is being asked in each question
- ◆ respond to the command words used in each question
- ◆ use knowledge and understanding gained from the course and avoid using generic information or general knowledge
- ◆ avoid referencing products that have not been studied during the course
- ◆ consider the mark allocation for each question and tailor their answer accordingly

Using past papers is an effective method for improving skills and assessing knowledge and understanding. However, it is important that centres give candidates the opportunity to experience past papers under exam conditions and time constraints. Centres should provide formative assessment and feedback on performance to help candidates develop their exam skills and confidence.

Grade boundary and statistical information:

Statistical information: update on courses

Number of resulted entries in 2018	93
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Number of resulted entries in 2019	79
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Statistical information: performance of candidates

Distribution of course awards including grade boundaries

Distribution of course awards	Percentage	Cumulative %	Number of candidates	Lowest mark
Maximum mark				
A	7.6%	7.6%	6	142
B	25.3%	32.9%	20	122
C	31.6%	64.6%	25	102
D	13.9%	78.5%	11	92
No award	21.5%	-	17	-

General commentary on grade boundaries

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.

SQA aims to set examinations and create marking instructions that allow:

- ◆ a competent candidate to score a minimum of 50% of the available marks (the notional C boundary)
- ◆ 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.

Therefore, SQA holds a grade boundary meeting every year for each subject at each level to bring together all the information available (statistical and judgemental). The principal assessor and SQA qualifications manager meet with the relevant SQA head of service and statistician to discuss the evidence and make decisions. Members of the SQA management team chair these meetings. SQA can adjust the grade boundaries as a result of the meetings. This allows the pass rate to be unaffected in circumstances where there is evidence that the question paper has been more, or less, challenging than usual.

- ◆ The grade boundaries can be adjusted downwards if there is evidence that the question paper is more challenging than usual.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.

Grade boundaries from question papers in the same subject at the same level tend to be marginally different year to year. This is because the particular questions, and the mix of questions, are different. This is also the case for question papers set by centres. If SQA alters a boundary, this does not mean that centres should necessarily alter their boundary in the question papers that they set themselves.