Course Report 2018

Subject	Design and Manufacture
Level	Advanced Higher

This report provides information on the performance of candidates. 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

Summary of the course assessment

Component 1: project
The project is allocated a total of 120 marks. Candidates are allowed to choose their own task.

The project is internally marked by centres and verified by SQA visiting verifiers. There was no change to the project 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 projects which were verified had been fully completed.

Component 2: question paper
The question paper is worth 80 marks and consists of two sections:

♦ Section 1 is worth 30 marks and focuses on the evolution of products.
♦ Section 2 is worth 50 marks and focuses on knowledge and understanding gained during the product development and product analysis units.

All questions required extended responses to the command words used in the question such as explain or describe.

The question paper generally performed in line with expectations, and feedback from the marking team and from practitioners suggested that the question paper was fair in terms of course coverage and overall level of demand. However the wording used in question 1(b) affected candidate's ability to access the full range of marks. This was taken into account and the Grade Boundary was adjusted.
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Section 2: Comments on candidate performance

Areas in which candidates performed well

Component 1: project

Project planning: This section was done well by a significant number of candidates. A number of candidates enhanced their evidence by keeping diaries of their progress which included details of issues which had arisen and laid out next steps.

Generating and exploring ideas: Although there was limited evidence of exploration of ideas, the majority of candidates demonstrated good idea generation skills.

Applying graphic techniques to inform and communicate design decisions: A number of candidates demonstrated very strong skills in the use of graphics.

Component 2: question paper

Question 1(a)	All candidates attempted this question. The majority of candidates had knowledge of specific materials and how they influenced products.
Question 2(a)	All candidates attempted this question. Candidates demonstrated a good knowledge and understanding of how products are influenced by the target market and made direct references to the product in the question.
Question 2(b)	Most candidates attempted this question. Candidates had a good knowledge of rotational moulding. They generally achieved the full three marks when they made reference to the product in the question.
Question 2(c)	Most candidates attempted this question. Candidates generally had a good knowledge of quality control and provided a suitably detailed description appropriate for this level of study.
Question 3(a)	Most candidates attempted this question. Candidates focused on a research strategy aimed at gathering information about the product in the question rather than describing a technique or providing generic responses.
Question 5(a)	All candidates attempted this question. Candidates demonstrated a good knowledge of methods to reduce a product's impact on the environment. They achieved marks in the top band when they provided detailed descriptions.

Areas which candidates found demanding

Component 1: project

Generating and developing ideas towards a design proposal: As mentioned above, candidates generally demonstrated good idea generation skills, however most candidates demonstrated very little skill in the development of their idea(s). Development was often very superficial and lacked any evidence of application of knowledge and 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 number of candidates made little or no use of modelling. Models often appeared to have no purpose and did not inform or communicate design decisions.

Applying knowledge and understanding of materials and manufacturing processes: A number of candidates demonstrated very superficial knowledge of materials and processes. This had a direct impact on the development of their proposal.

Applying knowledge and understanding of design issues: A number of candidates demonstrated very superficial knowledge of design issues. Again, this had a direct impact on the development of their proposal.

Component 2: question paper

Question 1(b)	Most candidates attempted this question. Unfortunately very few candidates drew on specific knowledge to answer the question. Most candidates failed to provide answers at a suitable level and struggled to describe changes to a product's evolution. The majority of candidates limited their responses to superficial aesthetic changes or made unqualified statements about products becoming cheaper, smaller and up-to-date (fashionable). A number of candidates failed to read the question and provided answers that described external factors rather than their influence on the evolution of products. 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. Most of the knowledge demonstrated was based on assumptions instead of factual information.
Question 1(c)	Few candidates had a good understanding of specific technologies. Most answers were based on 3D printing, however candidates' depth of knowledge on this topic was very limited. Despite repeated requests that candidates do not use their mobile phone as an example when responding to the question paper, almost all candidates did so when responding to this question. Unfortunately candidates' depth of knowledge regarding their phone's design and use of technology is limited or incorrect.

Question 3(c)   This question required candidates to make specific reference to the product (Lytra shower leg). Unfortunately many candidates simply provided a generic description of modelling and made no reference to the Lytra shower leg. Many candidates simply listed a number of different types modelling and their generic use. Responses were very repetitive.

Question 4(b)   A number of candidates did not attempt this question and those who did struggled to demonstrate a suitable depth of knowledge. Candidates had limited knowledge of marketing and tended to provide a list of advertising methods rather than describing strategies.

Question 5(b)   The majority of candidates could not provide a suitable response at Advanced Higher level. Most responses were limited to sketching and computer aided design. Many candidates described rather than explained why different graphic techniques are required, or repeated the same reasons for using different techniques, or listed a range of techniques.

Question 6(b)   Candidates did not have the depth of knowledge to **describe** methods companies could use to protect their intellectual property and tended instead to merely list the various method that can be used.

Section 3: advice for the preparation of future candidates

Component 1: project

A significant number of candidates undertook tasks which 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 relevant skills and knowledge at Advanced Higher level in order to apply them in the project. In particular, candidates must be able to develop their initial ideas through exploration and refinement. Candidates must be given advice and opportunities to develop their exploration and development skills during their Unit work.

Centres are advised to refer to the candidate evidence available on SQA's secure site.

Component 2: question paper

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

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

Success in the question paper requires a range of skills as well as knowledge and understanding. It is important that candidates are made aware of these skills and are given the opportunity to gain and practice them throughout the course.

♦ Candidates must ensure they read questions fully before attempting to answer them.
♦ Candidates should plan their answers to cover what is being asked in the question.
♦ Candidates must respond to the command words used in the question paper.
♦ Candidates should use knowledge and understanding gained from the course and avoid using generic information or general knowledge when answering questions.
♦ Candidates should avoid referencing products that have not been studied during their course when answering questions.
♦ Candidates should 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 candidates are given the opportunity to experience these under exam condition and time constraints. Formative assessment and feedback on their performance are also important when developing exam skills and confidence.

Grade boundary and statistical information:

Statistical information: update on courses

Number of resulted entries in 2017	82

Number of resulted entries in 2018	93

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	7.5%	7.5%	7	145
B	25.8%	33.3%	24	125
C	20.4%	53.8%	19	105
D	18.3%	72.0%	17	95
No award	28.0%	-	26	-

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 which 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.

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 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.

Grade boundaries from exam 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 exams set by centres. If SQA alters a boundary, this does not mean that centres should necessarily alter their boundary in the corresponding practice exam paper.