Higher
Coursework
Assessment Task

Higher Design and Manufacture

Assignment

Finalised Marking Instructions

Marking instructions

In line with SQA's normal practice, the following marking instructions are addressed to the marker. They will also be helpful for those preparing candidates for course assessment.

Candidate evidence is submitted to SQA for external marking.

General marking principles

Always apply these general principles. Use them in conjunction with the detailed marking instructions, which identify the key features required in candidates' responses.

a Always use positive marking. This means candidates accumulate marks for the demonstration of relevant skills, knowledge and understanding; marks are not deducted for errors or omissions.

b If a specific candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your team leader.

c When marking the assignment, you must refer to specific descriptions of competence for different mark ranges and allocate marks for each section using a 'best fit' approach.

d The statements within the bands give an indication of what may appear in the evidence. Candidates do not need to meet every statement to achieve marks within a band.

e Do not award marks where candidates' work does not meet the lowest range statement, or where they do not provide any evidence.

Detailed marking instructions

The statements within the band indicate the features which may be displayed in the evidence.

Skill	Max mark	Make your marking judgements based on the candidate's ability to carry out appropriate research and their use of research techniques.		
		1-2 marks	3-4 marks	5 marks
Carry out research into a given brief.	5	♦ few issues researched are appropriate ♦ limited use of primary and secondary research techniques.	♦ most issues researched are appropriate ♦ effective use of primary and secondary research techniques.	♦ issues researched are appropriate ♦ highly effective use of primary and secondary research techniques.
Further information for assessing — 'carry out research into a given brief'				
♦ research should generate information that is suitable for a specification ♦ do not award marks for research that generates generic information. Such research is not valid ♦ research techniques must be appropriate to the information being gathered.				

Skill	Max mark	Make your marking judgements based on the candidate's ability to produce a specification that has detail and covers a range of issues.		
		1 mark	2 marks	3 marks
Produce a specification.	3	♦ specification is limited in identifying the requirements of the proposal ♦ specification covers a limited range of issues ♦ specification contains limited detail.	♦ specification adequately identifies the requirements of the proposal ♦ specification covers an adequate range of issues ♦ specification contains adequate detail.	♦ specification clearly identifies the requirements of the proposal ♦ specification covers a wide range of issues ♦ specification is detailed.
Further information for assessing — 'produce a specification'				
♦ specification points that are drawn only from the brief will achieve a maximum of 1 mark ♦ candidates must draw their additional specification points from their research ♦ do not award marks for specification points that are based purely on the candidate's personal opinion.				

Skill	Max mark	Make your marking judgements based on the candidate's ability to generate a range of diverse and creative ideas that address the design brief.		
		1-2 marks	3-5 marks	6-8 marks
Generate initial ideas.	8	♦ ideas show limited diversity ♦ ideas show limited creativity ♦ few ideas address the brief ♦ ideas have limited detail.	♦ ideas show some diversity ♦ ideas show some creativity ♦ some ideas address the brief ♦ ideas have adequate detail.	♦ ideas show diversity ♦ ideas show creativity ♦ ideas address the brief ♦ ideas have effective detail.

Further information for assessing — 'generate initial ideas'

- marks in this section are awarded for **initial** ideas. Award marks for additional ideas under the 'explore ideas' section
- to demonstrate the skills at the level of the top marks band, candidates need to generate a wide range of ideas
- award marks for the candidate's creativity and their ability to generate diverse ideas. Do not award marks for iterations of the same idea
- to gain marks, ideas must address the brief. For example, do not award marks for random shapes or forms
- do not award marks above the bottom band for copies or slight alterations of existing ideas
- candidates can communicate detail through graphics, models and/or annotations.

Skill	Max mark	Make your marking judgements based on the candidate's ability to explore ideas towards a proposal. This includes their ability to consider alternatives to evolve the proposal and the requirements of the design proposal.			
		1-3 marks	4-6 marks	7-9 marks	10-12 marks
Explore ideas.	12	♦ limited exploration ♦ limited consideration of alternatives ♦ few requirements of the proposal have been considered.	♦ some effective exploration ♦ some consideration of alternatives ♦ some requirements of the proposal have been considered.	♦ effective exploration ♦ good consideration of alternatives ♦ most requirements of the proposal have been considered.	♦ highly effective exploration ♦ clear consideration of alternatives ♦ the requirements of the proposal have been considered.

Further information for assessing — 'explore ideas'

- ♦ meaningful exploration results in improvements to initial ideas. The requirements of the brief and specification should drive the exploration. Evidence of meaningful exploration is likely to look divergent and supported by the candidate's creativity, problem-solving ability and knowledge and understanding of key areas of the course
- ♦ candidates can demonstrate exploration:
  - — throughout the folio – evidence is likely to be graphics, photographs of models and annotations
  - — through considering the requirements of the proposal
  - — through considering alternatives to the key aspects, such as functional requirements, safety, ergonomics, assembly and aesthetics, to evolve the proposal
- ♦ exploration must be meaningful. Do not award marks for simple changes, such as rounding corners.

Skill	Max mark	Make your marking judgements based on the candidate's ability to refine ideas towards a design proposal, and the range of aspects refined.		
		1-2 marks	3-4 marks	5-6 marks
Refine ideas.	6	♦ limited refinement of ideas ♦ limited range of aspects of the proposal has been refined ♦ limited detail to inform plan for manufacture.	♦ adequate refinement of ideas ♦ adequate range of aspects of the proposal has been refined ♦ adequate detail to inform plan for manufacture.	♦ thorough refinement of ideas ♦ a range of aspects of the proposal has been refined ♦ effective detail to inform plan for manufacture.

Further information for assessing — 'refine ideas'

- ♦ thorough refinement will result in a detailed proposal. Evidence of refinement is likely to be convergent and supported by the candidate's ability to test, evaluate, and apply knowledge and understanding of key areas of the course
- ♦ refinement should lead to a level of detail that allows the candidate to produce a plan for commercial manufacture
- ♦ candidates can refine a range of aspects of the proposal. These will depend on the proposal but may include function, sizes, materials, aesthetics and assembly
- ♦ do not award marks above the bottom band for dimensioned drawing on its own.

Skill	Max mark	Make your marking judgements based on the candidate's ability to apply knowledge and understanding of materials, manufacturing and assembly processes to develop a design proposal.			
		1-2 marks	3-5 marks	6-8 marks	9-10 marks
Apply knowledge and understanding of materials, manufacturing and assembly processes.	10	♦ limited use of knowledge and understanding of materials, manufacturing and assembly to evaluate and inform decisions ♦ limited knowledge and understanding of materials, manufacturing and assembly.	♦ partially effective use of knowledge and understanding of materials, manufacturing and assembly to inform decisions ♦ some knowledge and understanding of materials, manufacturing and assembly.	♦ effective use of knowledge and understanding of materials, manufacturing and assembly to inform decisions ♦ good knowledge and understanding of materials, manufacturing and assembly.	♦ highly effective use of knowledge and understanding of materials, manufacturing and assembly to inform decisions ♦ strong knowledge and understanding of materials, manufacturing and assembly.

Further information for assessing — 'apply knowledge and understanding of materials, manufacturing and assembly processes'

- ♦ evidence can be candidate annotations, comments, justification and evaluations
- ♦ to gain marks in the top band, candidates must demonstrate application of detailed and appropriate knowledge and understanding of materials, manufacturing and assembly processes when developing their proposal
- ♦ candidates should apply their knowledge and understanding of materials, manufacturing and assembly processes to develop the proposal
- ♦ do not award marks for generic statements about materials and processes
- ♦ do not award marks for a list of archived facts collected about materials and processes.

Skill	Max mark	Make your marking judgements based on the candidate's ability to apply knowledge and understanding of design to develop a design proposal.			
		1-3 marks	4-6 marks	7-9 marks	10-12 marks
Apply knowledge and understanding of design.	12	♦ limited use of knowledge and understanding of design to inform decisions ♦ limited knowledge and understanding of design.	♦ partially effective use of knowledge and understanding of design to inform decisions ♦ some knowledge and understanding of design.	♦ effective use of knowledge and understanding of design to inform decisions ♦ good knowledge and understanding of design.	♦ highly effective use of knowledge and understanding of design to inform decisions ♦ strong knowledge and understanding of design.

Further information for assessing — 'apply knowledge and understanding of design'

- evidence can be candidate annotations, comments, graphics and evaluations
- to gain marks in the top band, candidates must demonstrate application of detailed and appropriate knowledge and understanding of design when developing their proposal
- candidates should apply their knowledge and understanding of design to develop the proposal. Do not award marks for information covered on the 'planning for commercial manufacture' pro forma
- do not award marks for generic statements about design
- do not award marks for a list of archived facts collected about design
- to achieve marks in the top band, candidates must apply design knowledge related to the key points in the specification.

Skill	Max mark	Make your marking judgements based on the candidate's ability to apply a range of appropriate graphic techniques to communicate the development and detail of the design proposal.			
		1-3 marks	4-6 marks	7-9 marks	10-12 marks
Apply graphic techniques.	12	♦ limited communication through graphics ♦ limited detail is communicated through graphics.	♦ partially effective communication through graphics ♦ partially effective detail is communicated through graphics.	♦ effective communication through graphics ♦ effective detail is communicated through graphics.	♦ highly effective communication through graphics ♦ highly effective detail is communicated through graphics.

Further information for assessing — 'apply graphic techniques'

- ♦ candidates must use recognised graphic types that are appropriate for their purpose
- ♦ award marks for the appropriate use of graphics, not just the quality of the graphic
- ♦ candidates should use graphics to communicate detail where appropriate
- ♦ to achieve marks in the top band, it is likely that the candidate will have used a range of graphic types that communicate details such as sizes, features of components and assembly
- ♦ candidates can use graphics generated for the 'planning for commercial manufacture' as evidence for this section.

Skill	Max mark	Make your marking judgements based on the candidate's ability to apply a range of appropriate modelling techniques to inform and communicate design decisions.		
		1–3 marks	4-6 marks	7-8 marks
Apply modelling techniques.	8	♦ limited use of modelling to inform design decisions ♦ limited use of modelling to communicate design decisions.	♦ adequate use of modelling to inform design decisions ♦ adequate use of modelling to communicate design decisions.	♦ effective use of modelling to inform design decisions ♦ effective use of modelling to communicate design decisions.
Further information for assessing — 'apply modelling techniques'				
♦ candidates can carry out modelling at any stage of the design process ♦ to gain marks, candidates must indicate what they have learned from the models and what decisions they have reached ♦ to achieve marks in the top band, it is likely that the candidate will have used a range of modelling techniques ♦ modelling can be computer-generated and/or physical models.				

Skill	Max mark	Make your marking judgements based on the candidate's ability to produce detailed and accurate models.		
		1–3 marks	4–6 marks	7–8 marks
Demonstrate practical modelling skills.	8	♦ limited demonstration of practical skills ♦ limited detail and accuracy.	♦ adequate demonstration of practical skills ♦ adequate detail and accuracy.	♦ effective demonstration of practical skills ♦ effective detail and accuracy.
Further information for assessing — 'demonstrate practical modelling skills'				
♦ in this section, award marks for practical modelling skills. Do not award marks for computer-generated modelling ♦ although the candidate can demonstrate skills across more than one model, it is possible to gain marks in the top band with a single model ♦ the candidate must demonstrate skills in models that develop or communicate the proposal.				

Skill	Max mark	Make your marking judgements based on the candidate's ability to produce a plan that includes details of component parts and assembly of the design proposal.		
		1-2 marks	3-4 marks	5-6 marks
Produce a plan for commercial manufacture.	6	♦ limited detail of component parts ♦ limited detail of assembly ♦ product part table contains limited detail.	♦ adequate detail of component parts ♦ adequate detail of assembly ♦ product part table contains adequate detail.	♦ effective detail of component parts ♦ effective detail of assembly ♦ product part table contains effective detail.
Further information for assessing — 'produce a plan for commercial manufacture'				
♦ the plan should communicate information required for commercial manufacture. It should communicate manufacturing details and key sizes through a completed product part table (part name, materials, processes), graphic(s) and/or model(s) ♦ only award marks for evidence on the 'planning for commercial manufacture' pro forma.				

[END OF MARKING INSTRUCTIONS]