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Regulation

GCE subject-level conditions and requirements for design and technology (2022)

Published 11 November 2021

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Introduction

About this document

This document is part of a suite of documents which sets out the regulatory requirements for awarding organisations offering reformed A levels and AS qualifications in 2022.

We have developed all our requirements for GCE qualifications with the intention that AS and A level qualifications should fulfil the purposes set out below.

For A levels:

- define and assess achievement of the knowledge, skills and understanding which will be needed by students planning to progress to undergraduate study at a UK higher education establishment, particularly (although not only) in the same subject area
- set out a robust and internationally comparable post-16 academic course of study to develop that knowledge, skills and understanding
- permit UK universities to accurately identify the level of attainment of students
- provide a basis for school and college accountability measures at age 18
- provide a benchmark of academic ability for employers

Requirements set out in this document

This document sets out the GCE Subject Level Conditions for Design and Technology (2022). These conditions will come into effect at 09:30 on 12 November 2021 for the following qualifications:

- all GCE A levels in Design and Technology
- all standalone GCE AS qualifications in Design and Technology

for Learners completing the qualification in 2022, except where the General Qualifications Alternative Awarding Framework applies.

It also sets out our requirements in relation to:

- interpretation of the content document – an awarding organisation must comply with these requirements under Condition GCE(Design and Technology)1.1(c);
- assessment objectives – awarding organisations must comply with these requirements under Condition GCE(Design and Technology)1.2
- assessment – awarding organisations must comply with these requirements under Condition GCE(Design and Technology)2.3

With respect to the qualifications listed above, awarding organisations must also comply with:

- our [General Conditions of Recognition](#), which apply to all awarding

- organisations and qualifications
- our [GCE Qualification Level Conditions and Requirements](#)
 - all [relevant Regulatory Documents](#)

With respect to all other GCE qualifications in Design and Technology, taken by Learners completing the qualification in 2023 and after, an awarding organisation must continue to comply with the [GCE Subject Level Conditions and Requirements for Design and Technology](#).

Subject Level Conditions

GCE Subject Level Conditions for Design and Technology

Condition GCE(Design and Technology) 1: Compliance with content requirements

GCE (Design and Technology)1.1

In respect of each GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must –

- (a) comply with the requirements relating to that qualification set out in the document published by the Secretary of State entitled '[Design and technology AS and A level subject content](#)', document reference DFE-00210-2015,
- (b) have regard to any recommendations or guidelines relating to that qualification set out in that document, and
- (c) interpret that document in accordance with any requirements, and having regard to any guidance, which may be published by Ofqual and revised from time to time.

GCE (Design and Technology)1.2

In respect of each GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must comply with any requirements, and have regard to any guidance, relating to the objectives to be met by any assessment for that qualification which may be published by Ofqual and revised from time to time.

Condition GCE(Design and Technology) 2: Assessment

GCE (Design and Technology)2.1

Condition GCE4.1 does not apply to any GCE Qualification in Design and Technology which an awarding organisation makes available or proposes to make available.

GCE (Design and Technology)2.2

In respect of the total marks available for a GCE Qualification in Design and Technology which it makes available, an awarding organisation must ensure that –

- (a) 50 per cent of those marks are made available through Assessments by Examination, and
- (b) 50 per cent of those marks are made available through assessments that are not Assessments by Examination.

GCE(Design and Technology)2.3

An awarding organisation must ensure that in respect of each assessment for a GCE Qualification in Design and Technology which it makes available it complies with any requirements, and has regard to any guidance, which may be published by Ofqual and revised from time to time.

Subject content requirements

Requirements in relation to subject content for GCE Qualifications in Design and Technology

The subject content for GCE Qualifications in Design and Technology is set out in the [Department for Education's Design and Technology AS and A level subject content](#), document reference DFE-00210-2015 (the 'Content Document').

Condition GCE(Design and Technology)1.1(c) requires awarding organisations to interpret the Content Document in line with any requirements, and having regard to any guidance, published by Ofqual.

We set out our requirements for the purposes of Condition GCE(Design and Technology)1.1(c) below.

Prototypes and practical work

An awarding organisation must interpret the Content Document as if –

- (a) in paragraphs 3, 6 and 14, the requirement to make a prototype allows a Learner to make or produce a mock-up or clear and detailed intentions of prototypes rather than a finished product, and
- (b) in paragraph 14, a Learner may watch a demonstration of the use of a range of relevant specialist tools, techniques, processes, equipment and machinery rather than use them him or herself.

Assessment objectives

Assessment objectives – GCE Qualifications in Design and Technology

Condition GCE(Design and Technology)1.2 allows us to specify requirements relating to the objectives to be met by any assessment for GCE Qualifications in Design and Technology.

The assessment objectives set out below constitute requirements for the purposes of Condition GCE(Design and Technology)1.2. Awarding organisations must comply with these requirements in relation to all GCE Qualifications in Design and Technology they make available.

Assessment objective	Description	A level weighting	AS weighting
AO1	Identify, investigate and outline design possibilities to address needs and wants	10 to 15%	10 to 15%
AO2	Design prototypes that are fit for purpose	20 to 25%	20 to 25%
AO3	Analyse and evaluate – <ul style="list-style-type: none">• design decisions and outcomes, including for prototypes designed or made by themselves and others• wider issues in design and technology	20 to 25%	20 to 25%
AO4	Demonstrate and apply knowledge and understanding of – <ul style="list-style-type: none">• technical principles• design and making principles	35 to 40%	35 to 40%

Assessment requirements

Assessment requirements – GCE Qualifications in Design and Technology

Condition GCE(Design and Technology)2.3 allows us to specify requirements in relation to assessments for GCE Qualifications in Design and Technology.

We set out below our requirements for the purposes of Condition GCE(Design and Technology)2.3. Awarding organisations must comply with these requirements in relation to all GCE Qualifications in Design and Technology they

make available.

Mathematical skills, knowledge and understanding

The subject content for GCE Qualifications in Design and Technology is set out in the document published by the Secretary of State entitled '[Design and technology GCE AS and A level subject content](#)', document reference DFE-00210-2015 (the 'Content Document').

Paragraph 9 of the Content Document states that -

“ Design and technology specifications may offer one of more of the endorsed titles [...]

- design and technology (product design)
- design and technology (fashion and textiles)
- design and technology (design engineering)

Appendix 1 to the Content Document specifies, for each of the endorsed titles, the mathematical skills, knowledge and understanding which Learners will be required to apply in GCE Qualifications in Design and Technology ('Mathematical Skills').”

In designing and setting the Assessments by Examination for a GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must ensure that –

- (a) questions and tasks rewarding the use of Mathematical Skills assess those skills within the context of other areas of the subject content, and not in isolation,
- (b) in the Assessments by Examination for a GCE Qualification in Design and Technology with a 'design engineering' endorsed title, at least 25 per cent of the marks in those assessments are made available through questions and tasks that reward the use of Mathematical Skills,
- (c) in the Assessments by Examination for a GCE Qualification in Design and Technology which does not have a 'design engineering' endorsed title, at least 15 per cent of the marks in those assessments are made available through questions and tasks that reward the use of Mathematical Skills,
- (d) the questions and tasks outlined in (b) and (c) are set at a Level of Demand that is not lower than that which is expected of Learners in assessments for the higher tier in a GCSE Qualification in Mathematics, and
- (e) without prejudice to the above requirements and those outlined in the Content Document, in each set of assessments^{[footnote 1](#)} Mathematical Skills are assessed across a range of Levels of Demand which supports effective differentiation in relation to the qualification.

Scientific skills, knowledge and understanding

Appendix 1 to the Content Document also specifies, for each of the endorsed titles, the scientific skills, knowledge and understanding which Learners will be required to apply for GCE Qualifications in Design and Technology (the 'Science Requirements').

In respect of each GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must explain and justify in its assessment strategy how it has addressed the Science Requirements within both the specification and assessments for that qualification.

Non-examination Assessment

Condition GCE(Design and Technology)2.2(b) states that an awarding organisation must ensure that, of the total marks available for a GCE Qualification in Design and Technology, 50 per cent of those marks are made available through assessments that are not Assessments by Examination.

In respect of that 50 per cent, an awarding organisation must ensure that the marks are comprised as follows –

- (a) assessment objective AO1 is assessed in its entirety through assessments that are not Assessments by Examination,
- (b) assessment objective AO2 is assessed in its entirety through assessments that are not Assessments by Examination, and
- (c) at least 10 per cent of the marks available for the qualification are made available in respect of assessment objective AO3.

In relation to paragraph (c) above, a Learner's analysis and evaluation of design decisions and outcomes must only be assessed through the assessments which are not Assessments by Examination.

Non-examination Assessment (A level)

The requirements in this section apply to GCE A level qualifications in Design and Technology which an awarding organisation makes available or proposes to make available.

In respect of the assessments which are not Assessments by Examination, an awarding organisation must ensure that each Learner is required to complete a task which –

- (a) requires the Learner to produce the following evidence –
 - (i) either –
 - (A) a final prototype(s), or
 - (B) a mock-up and/or clear and detailed intentions in relation to a prototype,
 - (ii) based on a design brief developed by the Learner, and such additional evidence as is necessary to enable the consideration of that Learner's level of attainment in respect of all of the relevant criteria against which Learners' performance in that assessment will be differentiated, and
- (b) must be taken under conditions specified by the awarding organisation, including, in particular, conditions which –
 - (i) ensure that the evidence generated by each Learner can be Authenticated, and

(ii) require each Learner to produce the evidence in (a)(i) above under Immediate Guidance or Supervision.

Non-examination Assessment (AS)

The requirements in this section apply to GCE AS qualifications in Design and Technology which an awarding organisation makes available or proposes to make available.

In respect of the assessments which are not Assessments by Examination, an awarding organisation must ensure that each Learner is required to complete a task which –

(a) requires the Learner to produce the following evidence –

(i) a design brief developed in response to a contextual challenge set by the awarding organisation,

(ii) either –

(A) a final prototype(s) based on that design brief, or

(B) a mock-up and/or clear and detailed intentions in relation to a prototype, and

(iii) such additional evidence as is necessary to enable the consideration of that Learner's level of attainment in respect of all of the relevant criteria against which Learners' performance in that assessment will be differentiated, and

(b) must be taken under conditions specified by the awarding organisation, including, in particular, conditions which –

(i) ensure that the evidence generated by each Learner can be Authenticated, and

(ii) require each Learner to produce the evidence in (a)(ii) above under Immediate Guidance or Supervision.

Contextual challenges (AS)

The requirements in this section apply to GCE AS qualifications in Design and Technology which an awarding organisation makes available or proposes to make available.

The Content Document requires–

“ students to undertake a small-scale design, make and evaluate project in response to a realistic contextual challenge, taking into account the needs and wants of the user.”

This provision must be interpreted in line with the requirements published under Condition GCE(Design and Technology)1.1(c).

In respect of each set of assessments, an awarding organisation must not communicate the contextual challenges that it has set before 1 June in the calendar year preceding the year in which the qualification is to be awarded.

Marking of non-examination assessments

Evidence generated by a Learner in an assessment for a GCE Qualification Design and Technology which is not an Assessment by Examination may be marked –

- (a) by the awarding organisation or a person connected to the awarding organisation,
- (b) by a Centre, or
- (c) through a combination of (a) and (b).

In any event, the awarding organisation must demonstrate to Ofqual's satisfaction in its assessment strategy that –

- (a) it has taken all reasonable steps to identify the risk of any Adverse Effect which may result from its approach to marking the assessments (and to Moderation where appropriate) and
- (b) where such a risk is identified, it has taken all reasonable steps to prevent that Adverse Effect or, where it cannot be prevented, to mitigate that Adverse Effect.

-
1. For the purposes of these requirements, a 'set of assessments' means the assessments to be taken by a particular Learner for a GCE Qualification in Design and Technology. For clarity, the assessments taken by Learners may vary, depending on any possible routes through the qualification.↵

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