

Your guide to the changes for 2021

Following [Ofqual's consultation](#) on arrangements for the assessment of VTQs in 2020/21, we've reviewed units in our Cambridge Nationals and Cambridge Technicals being taken this academic year to provide specific guidance at qualification and unit level on changes to requirements or alternative approaches to support public health guidance.

Our changes are designed to make units to be taken in 2020/21 possible to complete, given the constraints you are all working with, and to make sure that the learning outcomes and assessment criteria can still be met.

We understand that the current disruption continues to change and also varies across regions, so our guidance gives acceptable alternatives you can consider when delivering units in your school /college while following the public health guidance.

Please use the [specification and assignments](#) available on our website, alongside this document, to plan and carry out assessment in 2020-21.

Overview of changes for R106

Unit number	Unit title	Mandatory (M)/ Optional (O)
R106	Product analysis and research	M

Which element(s) of the unit are affected?

LO3 requires candidates to disassemble a product and to analyse this, but access to workshops/tools may be limited

What adaptations are possible for this unit?

Adaptations are possible. They should focus on making the disassembly process as accessible and deliverable as possible in the centre, while still meeting the LO and marking criteria.

Centres can achieve this by:

- Choosing suitable products that use relatively few hand tools.
- Using a range of products across the teaching group, so different candidates can potentially use different tools.
- Using alternative locations for the disassembly process. Access to workshops is not necessarily needed.

What has changed?

What has changed	Detail
Tasks	<p>Learning Outcome 3: Be able to analyse an existing product through disassembly</p> <p>For LO3, candidates need to safely disassemble a product using appropriate tools. They then need to analyse its constituent components to show that they understand its components, assembly methods, materials, production methods and maintenance.</p> <p>Possible adaptations:</p> <ul style="list-style-type: none"> Choice of product is key. For example, set assignment B uses a bike lamp, which could be disassembled in a classroom rather than a workshop, using relatively few hand tools. <p>Other products suitable for this task would be:</p> <ul style="list-style-type: none"> a non-functioning PC game controller handset a battery powered clock an unused TV remote control handset <p>These can be completed outside a workshop with a small range of hand tools.</p> <p>The centre may choose other suitable products based on cost, and how easy it is to obtain and disassemble them.</p> <p>If manufacturer's instructions are not available, candidates will be expected to produce step by step instructions before or during the disassembly. They could also produce a commentary to describe each aspect of the process, including appropriate tools and potential safety issues.</p> <p>Centres should note that working in small groups is already allowed for this unit. See assessment guidance in Appendix B of the unit specification.</p>
Centre guidance/assessment guidance	N/A
Other documentation, e.g. witness statements	No changes required.
Considerations for moderation	<p>Moderation needs to consider that:</p> <ul style="list-style-type: none"> candidates may have limited access to tools and resources some tasks may not have been carried out in a workshop. <p>Explanations and descriptions may be limited in technical terminology.</p>

Overview of changes for R107

Unit number	Unit title	Mandatory (M)/ Optional (O)
R107	Developing and presenting engineering designs	M (for Certificate)

Which element(s) of the unit are affected?

LO1 and LO2 require access to drawing tools.

LO3 requires access to CAD software.

What adaptations are possible for this unit?

Adaptations are possible for each of these LOs. They should focus on making the process as accessible and deliverable in the centres as possible, while still meeting the LOs and marking criteria.

Centres can achieve this by:

- Choosing products where the suggested adaptations make the design process more accessible.
- Allowing candidates to use free versions of online CAD software, so they can access software in class or remotely.
- Reducing the number of drawings the candidate has to produce and allowing them to use graph/grid paper.

What has changed?

What has changed	Detail
Tasks	<p>Learning Outcome 1: Be able to generate design proposals using a range of techniques</p> <p>For LO1, candidates need to:</p> <ul style="list-style-type: none"> • Produce 2D and 3D sketches with appropriate rendering techniques, using shade, tone and texture. • Label and annotate their designs to identify and explain detail. • Use software to produce, modify and enrich design proposals. • Use relevant skills, knowledge and understanding from other units in the specification. <p>Possible adaptations:</p> <ul style="list-style-type: none"> • Candidates will still need to access IT facilities. However, you should choose to design a product that optimises the amount of IT needed • Centres could simplify the requirement to use software to produce, modify and enrich design. For example, sketches could be scanned into presentation software, and candidates could use the software to add labels, annotations and other enrichments.

What has changed	Detail
Tasks	<p>Learning Outcome 2: Know how to develop designs using engineering drawing techniques and annotation</p> <p>For LO2, candidates have to develop 2D and 3D engineering drawings using appropriate labelling techniques and annotations.</p> <p>Possible adaptations:</p> <ul style="list-style-type: none"> • Access to IT is not strictly required for this LO, as engineering drawings can be produced by hand. Candidates can use graph paper and/or grid paper for more accuracy. • CAD can be used to produce the 2D and 3D engineering drawings. This may mean that aspects of LO3 can be addressed at the same time . • Centres could consider using free online CAD software, so that other computers in the centre could be used, not just those that have registered CAD software installed. There are suggestions for suitable software in our Delivery Guide and resources link documents for this unit on our website. • Centres could reduce the number of drawings, so that candidates produce x1 2D and x1 3D annotated (dimensions, scale, tolerance) engineering drawings. <p>Learning Outcome 3: Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals</p> <p>For LO3, candidates need to produce design proposals using CAD applications.</p> <p>Possible adaptations:</p> <p>Centres can consider using free online CAD software, so that other computers in the centre could be used, not just those that have registered CAD software installed. There are suggestions for suitable software in our Delivery Guide and resources link documents for this unit on our website.</p>
Centre guidance/assessment guidance	N/A
Other documentation, e.g. witness statements	<p>No changes required.</p> <p>If candidates work on assessed work away from the centre, centres must monitor progress, prevent plagiarism and make sure that the work is completed to requirements. See sections 4.3 and 4.5 of the specification. Centres must supervise practical work to make sure it meets health and safety requirements.</p>
Considerations for moderation	<p>Moderation needs to consider that:</p> <ul style="list-style-type: none"> • candidates may have limited access to tools and resources • some tasks may not have been carried out in a workshop. <p>Explanations and descriptions may be limited in technical terminology.</p>

Overview of changes for R108

Unit number	Unit title	Mandatory (M)/ Optional (O)
R108	3D design realisation	M (for Certificate)

Which element(s) of the unit are affected?

LO3: Candidates need to use tools and processes effectively to produce and assemble an item that fully meets their production plan.

Access to workshops/tools may be limited.

What adaptations are possible for this unit?

Adaptations are possible for this LO. They should focus on making the optimisation process for LO3 as accessible and deliverable in the centres while still meeting the LO and marking criteria.

Centres can achieve this by:

- Choice of product is a key aspect. Centres could choose products where the suggested adaptations make the design process more accessible.
- Workshop access could be limited to producing the prototype, with other elements of the task being completed in a classroom.
- Products made using only hand tools will be acceptable.

What has changed?

What has changed	Detail
Tasks	<p>Learning Outcome 3: Be able to produce a prototype</p> <p>For LO3, candidates have to produce a prototype from an engineering drawing, using their production plan. They must, select appropriate materials and record all key stages.</p> <p>Possible adaptations:</p> <p>Complexity of product will be key to this. For example, centres could choose to produce a product (such as the one in set assignment A) that could be made from modelling foam or balsa wood, using simple hand tools. This could be produced in less time in a workshop or even a classroom, using relatively few tools. Candidates must still address health and safety requirements fully, including the use of PPE.</p>
Centre guidance/assessment guidance	N/A
Other documentation, e.g. witness statements	No changes required.
Considerations for moderation	<p>Moderation needs to consider that:</p> <ul style="list-style-type: none"> • candidates may have limited access to tools and resources • some tasks may not have been carried out in a workshop. <p>Explanations and descriptions may be limited in technical terminology.</p>

Support

OCR's team of expert Subject Advisors has created videos, webinars, and other resources to guide you through these changes and help you prepare your students for their exams in summer 2021.

These resources can be found on [the qualification page on our website](#).

Contact us

If you would like to contact us, you can do so at:

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