

1145-20 Level 2 Technical Award in Engineering

2022

Qualification Report

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Introduction

This document has been prepared by the Chief Examiner and Principal Moderator; it is designed to be used as a feedback tool for centres in order to enhance teaching and preparation for assessment. It is advised that this document is referred to when planning delivery and when preparing candidates for City & Guilds Technical assessments.

This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2022 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments:

- 1145-502 Level 2 Engineering - Theory exam (1)
 - March 2022 (Spring)
 - June 2022 (Summer)
- 1145-001 Level 2 Engineering - Synoptic assignment (1)

Foreword

Results August 2022

As you will likely be aware, Ofqual has announced that grading for General Qualifications this summer will be more generous than prior to the pandemic. This is partly due to managing the impact of disruption and learning loss on learner performance and also managing fairness between learners in different years who had different methods of determining their grades. Therefore, for A levels and GCSEs, grading will seek a midway position between 2019 and 2021, meaning, in general, results will be somewhat higher than prior to the pandemic. This year, 2022, is a transitional year and outcomes and standards will likely return to pre-pandemic levels in 2023.

Similarly, for Vocational and Technical Qualifications (VTQs), this summer will be a transitional year and Ofqual has now been clear that for VTQs “we should expect that this summer’s results will look different, despite exams and assessments taking a big step towards normality.” Ofqual has published a blog [What’s behind this summer’s VTQ results](#)

In acknowledgement of the disruption to learning and to support fairness for all learners certificating this summer (some of whom will be competing against learners taking General Qualifications for the same progression and higher education opportunities), we will be taking loss of learning into consideration, whilst still acknowledging the need to uphold the validity of the qualifications. On this basis, we have made the decision to apply a form of ‘safety net’ through some additional ‘generosity’ to both the theory examinations and synoptic assignments within our Technical Qualifications wherever appropriate, (noting that it may not be appropriate to apply where there is a clear impact on knowledge and skills to practice, particularly health and safety requirements or other relevant legislation). We are therefore also reviewing candidate work a few marks below (equivalent to 5% of maximum marks) the Pass and Distinction notional boundaries – the boundaries used during the awarding process as the best representation of maintaining the performance standard from 2019.

The reason for lowering boundaries, where appropriate, by 5% of the maximum marks available, is that it is broadly commensurate with the level of generosity learners are likely to see in General Qualifications at level 2 and level 3. Providing that senior examiners can support the quality of learners’ work seen below the notional boundaries and agree it is sufficient to maintain the integrity, meaning and credibility of the qualifications, the grade boundaries will be lowered across the full set of grades – e.g. Pass, Merit, Distinction and Distinction Star.

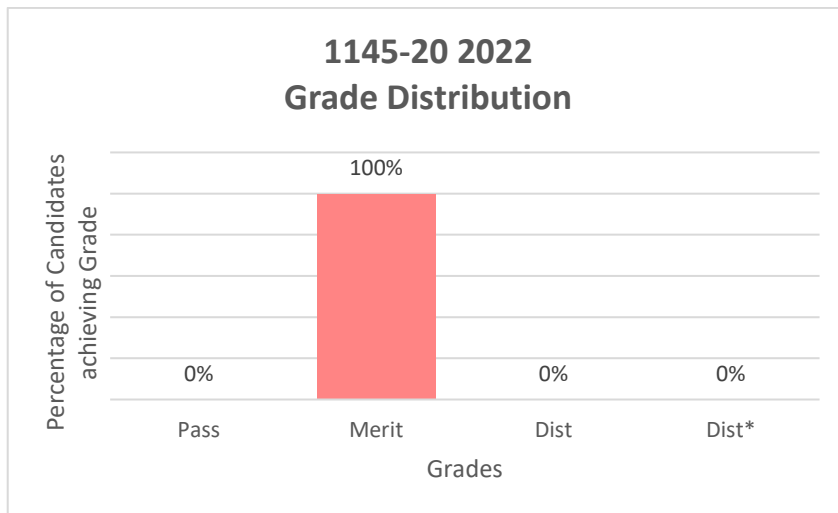
Given the circumstances, this is the best approach to take into account the disruption to teaching and learning across every learner in a fair and transparent way, and at the same time maintain the integrity and meaning of qualifications. This approach helps to level our Technical Qualifications awarding approach with that adopted for General Qualifications and other qualifications awarded in England and in the wider UK.

Spring examination series 2022

Having taken this decision, we are also mindful of learners who have taken components in **Spring 2022** and believe they should also have access to the same level of generosity. For these learners, we wish to adopt a similar approach. Therefore, for learners taking Technical Qualification assessments in spring there will be similar generosity, through the addition of 5% of the maximum mark available for the assessment. It is a different mechanism to that we are using for the summer assessments but provides the same level of generosity to those learners taking assessments in the summer.

Qualification Grade Distribution

The approximate grade distribution for this qualification is shown below:



This data is based on the distribution as of 26th August 2022.

Please note City & Guilds will only report qualification grades for candidates who have achieved all of the required assessment components, including Employer Involvement, optional units and any other centre assessed components as indicated within the Qualification Handbook. The grade distribution shown above could include performance from previous years.

Theory Exam

Grade Boundaries

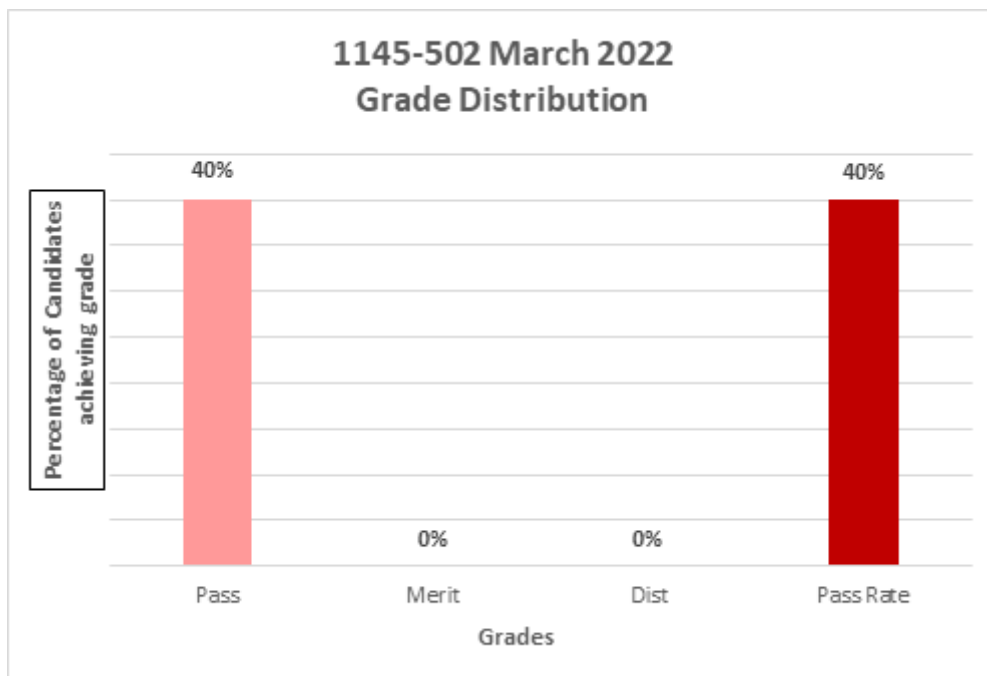
Assessment: **1145-502 Level 2 Engineering – Theory exam**
Series: **March 2022**

Below identifies the final grade boundaries for this assessment, as agreed by the awarding panel:

Total marks available	80
Pass mark	26
Merit mark	41
Distinction mark	56

The generosity applied to the summer assessments will also retrospectively be applied to candidates who achieved their best result in spring. 5% of the base mark of the assessment will be added to their score rather than applied to boundaries.

The graph below shows the approximate distributions of grades and pass rate for this assessment, it does not account of any marks that have been amended due to generosity:

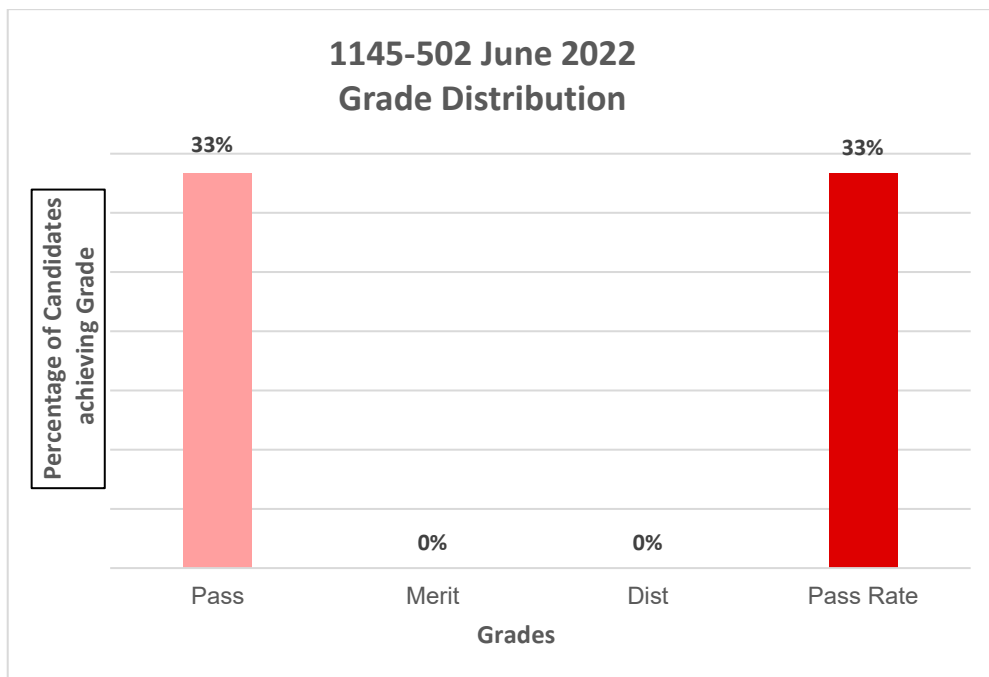


Assessment: **1145-502 Level 2 Engineering – Theory exam**
Series: **June 2022**

Below identifies the final grade boundaries for this assessment.

Total marks available	80
Pass mark	22
Merit mark	37
Distinction mark	52

The graph below shows the approximate distributions of grades and pass rate for this assessment using the above boundary marks:



Chief Examiner Commentary

Assessment component: 1145-502 Level 2 Engineering – Theory exam

Series 1 – March 2022

The paper as a whole and the individual questions met the requirements of the specification and were pitched appropriately for this level. The paper was comparable with the previous series in terms of questions assessing knowledge recall, understanding and extended responses. The cohort for this paper was extremely small, which makes it very difficult to draw statistical conclusions about candidate performance.

This examination paper was not well answered by candidates. There were a number of clear gaps in knowledge and understanding, leading to weak responses across the majority of items within the paper. For example, questions related to the purpose of engineering drawings, parametric modelling, units of measurement and manufacturing processes.

A number of questions were not attempted at all by some candidates, demonstrating large gaps in knowledge and understanding of the specification and handbook content.

The question relating to selecting materials, was generally very well answered and centres had clearly prepared candidates well for this type of question. Although electronics-based questions were generally not answered well, some candidates showed good knowledge and understanding of the use of switches in circuits.

Knowledge recall questions and questions assessing further understanding were equally poorly answered. For some questions requiring the demonstration of understanding, some candidates were able to give one or two basic points, but these responses often lacked the depth needed to achieve the higher marks.

The extended response question (ERQ) was generally not answered well, with no candidates scoring above the middle band. All candidates would have benefitted from exploring and discussing each of their basic descriptive comments in further detail, with supporting conclusions and justifications.

Series 2 – June 2022

The paper as a whole and the individual questions met the requirements of the specification and was comparable to the previous series. It was pitched appropriately for this level.

The paper was comparable with the previous series in terms of questions assessing knowledge recall, understanding and extended response. The cohort for this paper was extremely small, which makes it very difficult to draw statistical conclusions about candidate performance.

This examination paper was poorly answered by candidates with some questions not attempted. There were a number of clear gaps in knowledge and understanding, leading to weaker responses across the majority of questions within the paper. This was evident in the knowledge recall questions requiring candidates to state basic facts relating to types of drawings, recalling units of measurement, identifying material types and properties towards the making of engineered products and in describing the process of sheet metal forming.

There was limited understanding shown from questions requiring candidates to demonstrate understanding of concepts, theories and processes, with answers generally limited to a few basic points. This was evident in the questions that related to the purpose of components and composite materials, whereby candidates were sometimes able to make one or two general points of factual recall but were unable to produce responses with sufficient depth needed to access the higher marks. However, the question on virtual modelling was generally well answered, with candidates referring to reasons associated with time, materials and cost.

The extended response question (ERQ) produced a mixture of responses, although it was generally not answered well. All candidates would have benefitted from discussing a wider range of factors in greater depth in order to access the higher marks.

Synoptic Assignment

Grade Boundaries

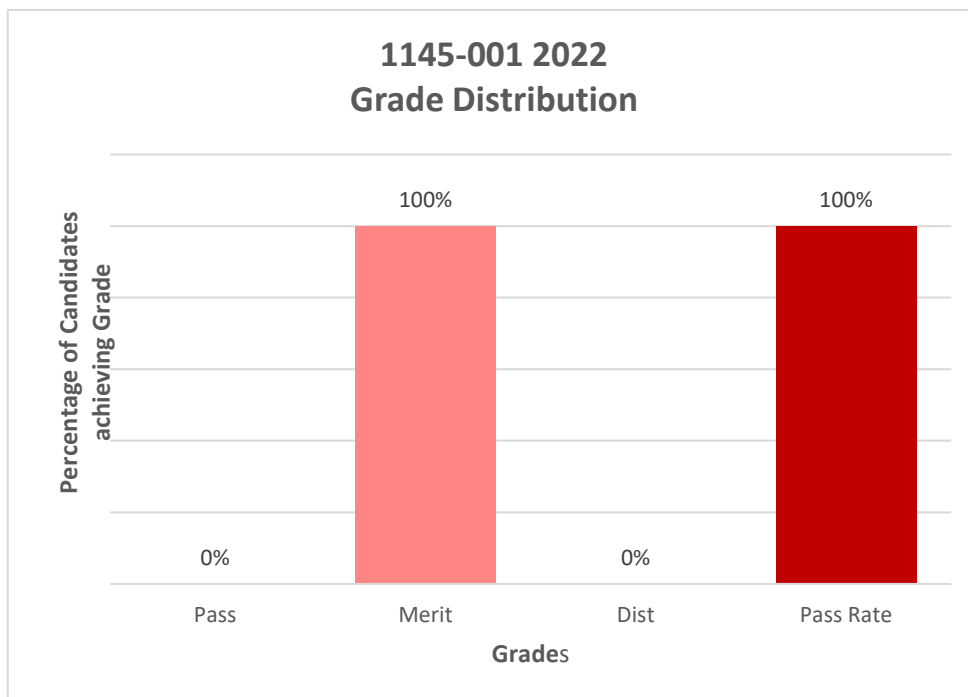
Assessment: 1145-001

Series: 2022

Below identifies the final grade boundaries for this assessment:

Total marks available	60
Pass mark	21
Merit mark	30
Distinction mark	39

The graph below shows the approximate distributions of grades and pass rate for this assessment using the above boundary marks:



Principal Moderator Commentary

Assessment component: 1145-001 Level 2 Engineering – Synoptic assignment (1)

The assignment was similar to the previous series in structure, evidence requirements and difficulty of task. It was pitched appropriately for this level.

The assignment involved the design and manufacture of a drawer alarm. This was carried out as a series of structured tasks.

Centres should note the minimum evidence required for each of the tasks is listed within the assignment and can be found under the headings ***What you must produce for marking*** and ***Additional evidence of your performance that must be captured for marking***. The centre should direct all candidates to complete each task and to produce **all** the evidence listed. When work is submitted to City & Guilds, for moderation or additional evidence is requested, the centre should submit **all** work completed by the candidate in conjunction with all the synoptic assignment recording forms.

The evidence submitted by candidates for AO2 (understanding) was generally appropriate but could have been improved. Whilst the evidence provided by most candidates included circuit diagrams, CAD drawings and records of testing that implicitly demonstrated the practical application of understanding, there were limited explicit statements showing understanding. Evidence could have been improved by including more annotation on circuit diagrams and drawings or by adding detailed explanations for the components selected, or the reasons for the use of the selected manufacturing processes.

AO3 (practical skill) was typically appropriately evidenced, with pictures of produced items and relevant commentary on the practical observation form. The circuits produced, typically displayed an appropriate level of soldering skills.

AO4 (bringing it all together) was, in general, appropriately evidenced, particularly through the circuit diagrams and the skills demonstrated in the CAD drawing. Evidence could have been improved by giving more detailed reasons for the selection of components in terms of functionality, for example, as annotations on the circuit diagram and pictures of models.

The evidence for attending to detail (AO5) relied heavily on subjective comments by the tutor assessor on the practical observation form. This could have been improved by including increased objective testing of functionality on the test record sheet.

Overall, it was clear that markers had considered awarding marks across the full range of AOs in all tasks which is to be commended. It would assist moderation if centres could make or add comments to illustrate where assessment criteria were being specifically addressed.