

1145-31 Level 3 Advanced Technical Diploma in Engineering

2019

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.

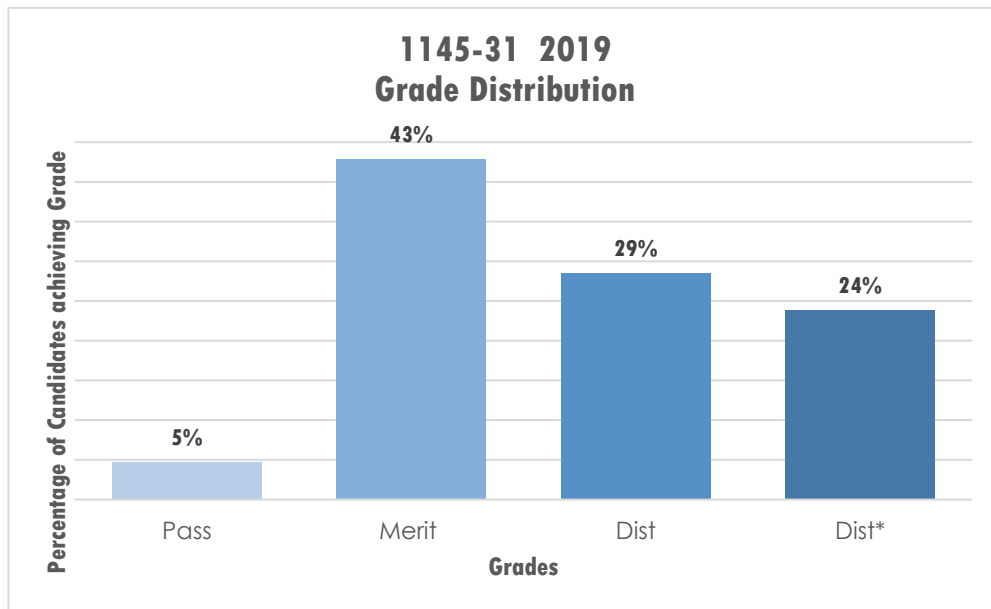
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2019 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments:

- 1145-530 Level 3 Engineering - Theory exam (1)
 - March 2019 (Spring)
 - June 2019 (Summer)
- 1145-532 Level 3 Engineering - Theory exam (2)
 - March 2019 (Spring)
 - June 2019 (Summer)
- 1145-033 Level 3 Engineering - Synoptic assignment (1)

Qualification Grade Distribution

The approximate grade distribution for this qualification is shown below:



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

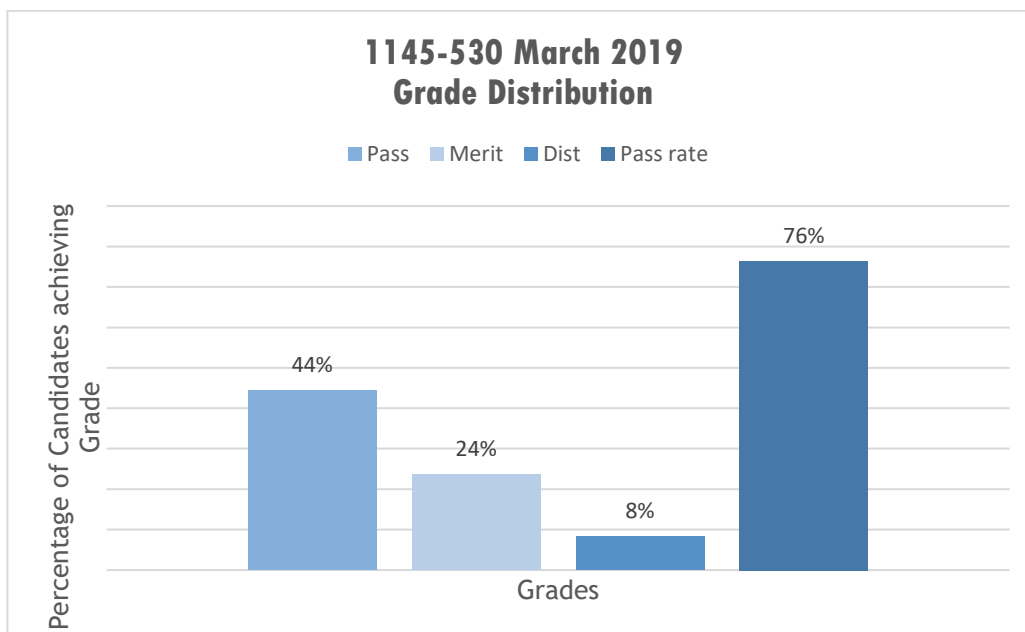
Assessment: **1145-530 Level 3 Engineering – Theory exam**

Series: **March 2019**

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

Total marks available	100
Pass mark	40
Merit mark	55
Distinction mark	70

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

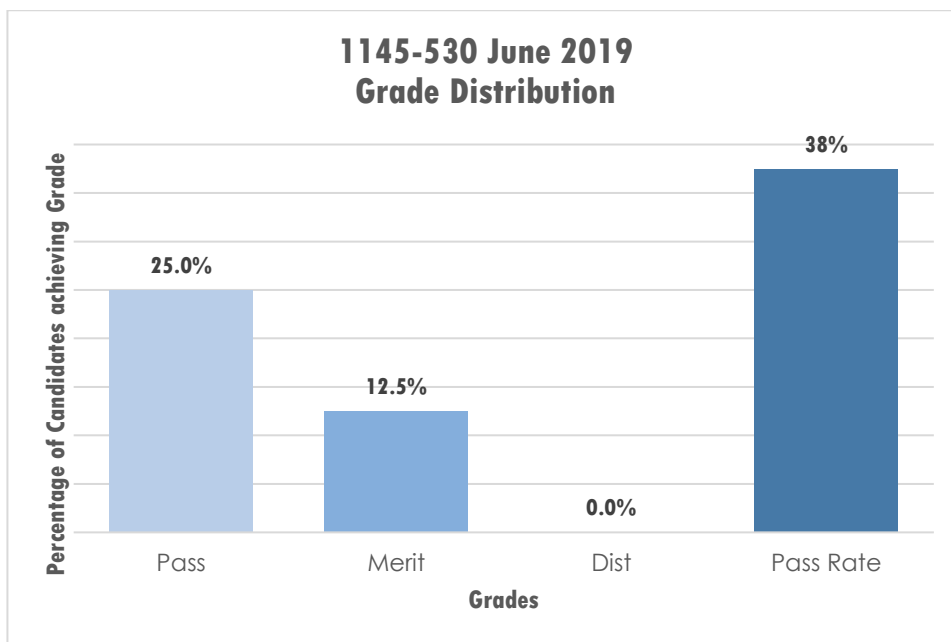


Assessment: **1145-530 Level 3 Engineering – Theory exam**
Series: **June 2019**

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

Total marks available	100
Pass mark	40
Merit mark	55
Distinction mark	70

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



Chief Examiner Commentary

General Comments on Candidate Performance

Assessment component: **1145-530 Level 3 Engineering – Theory exam**

Series 1 (March)

The paper as a whole and the individual questions met the requirements of the specification and were pitched appropriately for this level. In general, the paper was well answered by the candidates; the breadth of knowledge and understanding demonstrated by this cohort was considerably improved relative to the previous series.

Similar to the previous series, candidates generally showed good breadth and depth of knowledge when answering questions on the use and benefits of computer-based technologies, such as robotics and 3D printing modelling. However, gaps in knowledge and understanding were present in questions relating to composites, design criteria and any mathematical based questions. A significant number of candidates did not answer some of the maths questions.

There was a mixed response to the extended response questions. For the short question relating to material selection, generally this was answered well, although a notable proportion of candidates suggested a process that was not appropriate for the material they had recommended. The question covering the social and economic impact of the internet was very well answered, with many candidates detailing both direct and indirect implications and discussing their effects. In contrast, there was a weaker response to the longer question on materials selection. Many candidates demonstrated knowledge and understanding of the mechanical properties required by the application, and a proportion of candidates suggested appropriate materials. However, where it was present, the discussion was very limited. Very few candidates covered a variety of different types of consideration and there was typically very limited discussion of the relative effects of different considerations. All candidates would have benefited from producing more detailed supporting evaluations and conclusions to the points that were made.

General Comments on Candidate Performance

Assessment component: **1145-530 Level 3 Engineering – Theory exam**

Series 2 (June 2019)

Similar to the previous series, candidates demonstrated significant gaps in knowledge and understanding in questions relating to composites, design criteria and any mathematical based questions. A significant number of candidates did not attempt to answer some or all of maths questions.

There was a mixed response to the extended response questions. For the short question relating to material selection, generally this was answered well, although a notable proportion of candidates suggested a material that was not appropriate or just named a generic class of material. The question covering the social and economic impact of mass production had a mixed, but typically good, response. A substantial proportion of candidates addressed both the social and economic impacts; however, very few candidates detailed indirect implications and discussed their effects. In contrast, the response to the longer question on materials selection was varied, although in general these tended towards the weaker side. Many candidates stated the requirements of the application and indicated the direct implications of these requirements. However, very few candidates covered a variety of different types of consideration, and in particular manufacturing considerations were rarely taken into account. Further, there was typically very limited discussion or consideration of the relative effects of different considerations. All candidates would have benefited from producing more detailed supporting evaluations and conclusions to the points that were made.

Theory Exam

Grade Boundaries

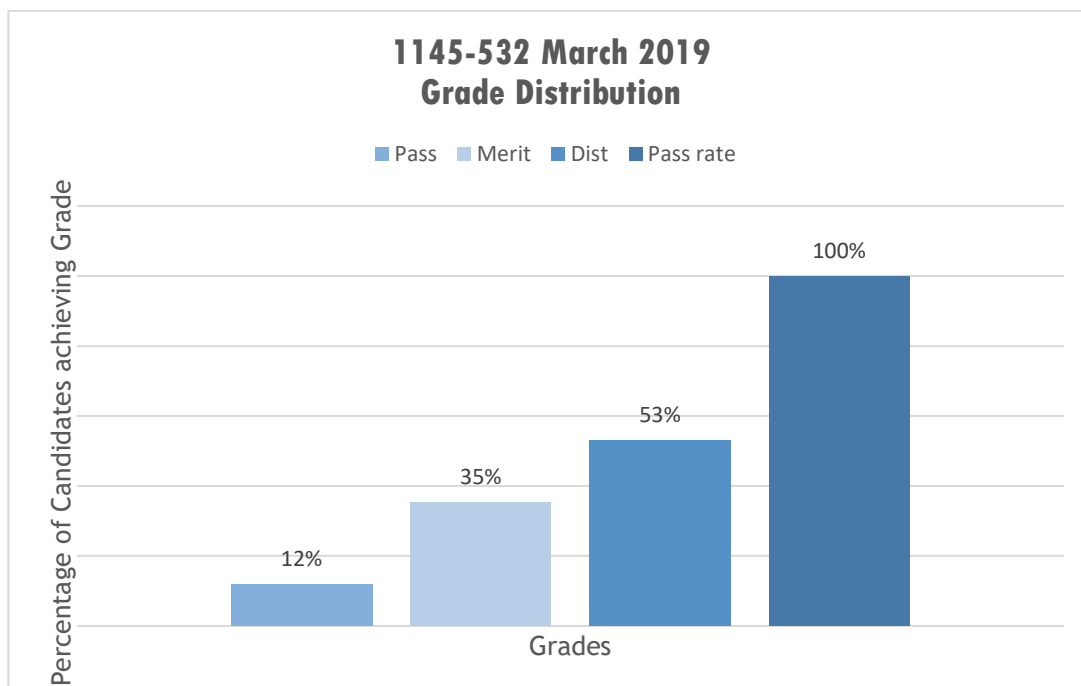
Assessment: **1145-532 Level 3 Engineering – Theory exam (2)**

Series: **March 2019**

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

Total marks available	60
Pass mark	23
Merit mark	31
Distinction mark	40

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



Theory Exam –

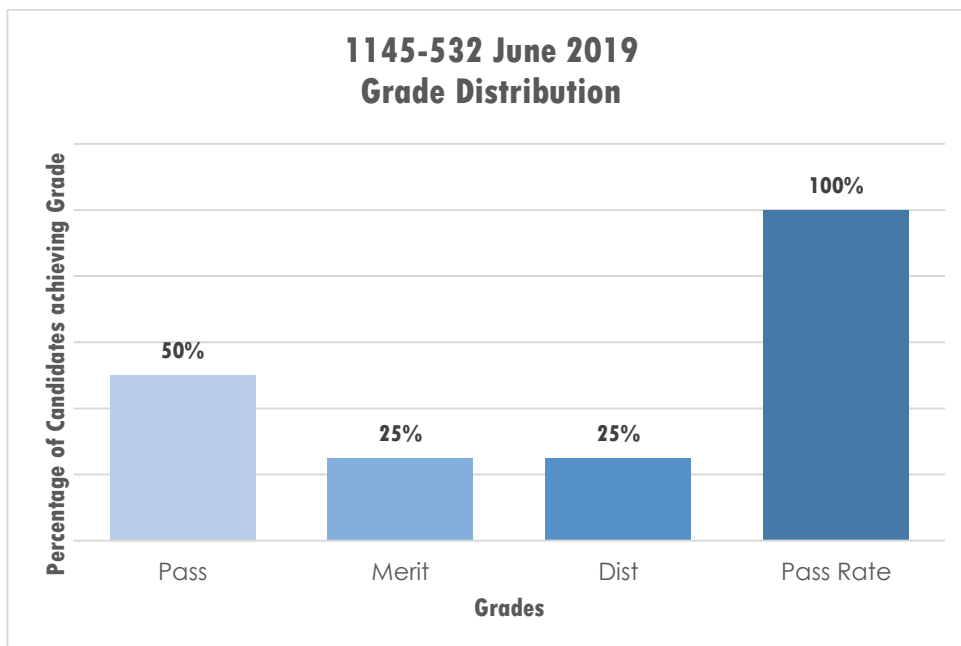
Assessment: **1145-532 Level 3 Engineering – Theory exam (2)**

Series: **June 2019**

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

Total marks available	60
Pass mark	23
Merit mark	31
Distinction mark	40

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



Chief Examiner Commentary

General Comments on Candidate Performance

Assessment component: **1145-532 Level 3 Engineering – Theory exam (2)**

Series 1 (March 2019)

This is the third cohort of learners to complete this qualification. The questions and paper as a whole met the requirements of the specification and were of a similar level to the previous paper.

As the cohort was relatively small, it is difficult to draw statistical conclusions regarding candidate performance. However, in general this paper was very well answered by the majority of candidates. Almost all candidates attempted all of the questions and there was an observable variation in the level of responses between different candidates.

In addition to the feedback on the specific questions below, some common themes were also noted. Questions on methods of terminating cables and stakeholders were not well answered. However, most candidates displayed a reasonable breadth of knowledge about health and safety and virtual and augmented reality. When questions asked for explanation of specific points, most candidates demonstrated good understanding.

The extended response questions and questions requiring longer answers were typically answered well and demonstrated the range of candidate abilities. However, similar to previous series, in some cases for the extended response question the candidates did not consider the secondary implications of the subject matter and in many cases they did not draw conclusions when discussing the topic.

General Comments on Candidate Performance

Assessment component: **1145-532 Level 3 Engineering – Theory exam (2)**

Series 2 (June 2019)

This is the fourth cohort of learners to complete this qualification. The questions and paper as a whole met the requirements of the specification and were of a similar level to the previous papers.

There were a very limited number of candidates and it was hard to draw any specific conclusions with regards to this cohort. In general there was reasonable or good knowledge recall by all candidates and all questions were attempted.

Synoptic Assignment

Grade Boundaries

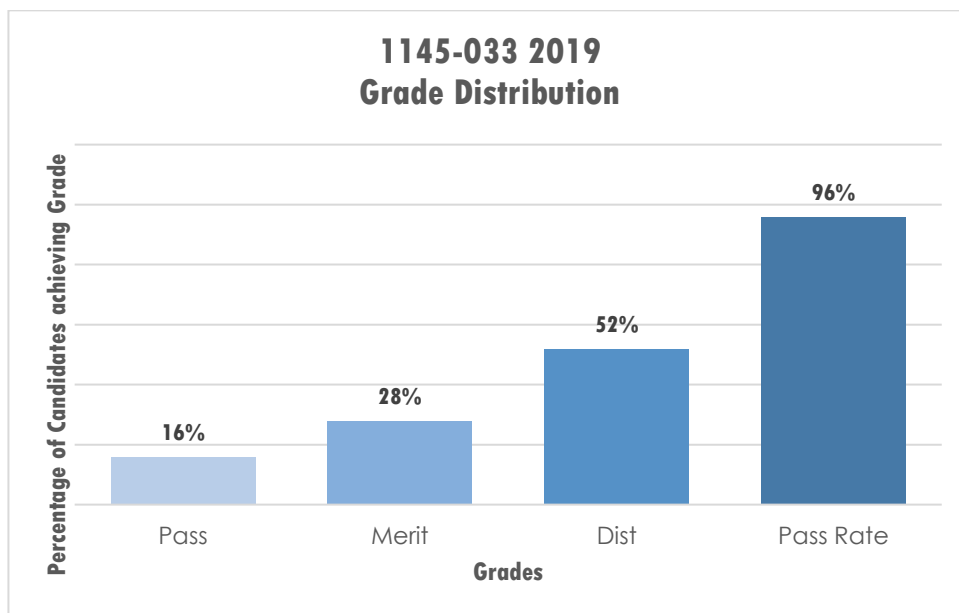
Below identifies the final grade boundaries for this assessment, as agreed by the awarding panel:

Assessment: 1145-033

Series: 2019

Total marks available	60
Pass mark	24
Merit mark	32
Distinction mark	40

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



Principal Moderator Commentary

The assignment was similar in level to the previous series. It met the requirements of the specification and was pitched appropriately.

In general, this assignment was completed well, with most candidates making a good attempt at all tasks and making a good attempt at satisfying the requirements of the brief. There were several good examples of practical work, supported by technical drawings, circuit diagrams and images of testing.

The main differentiator between the performance of different candidates was the level of explanation and annotation provided during the design activities. Whilst almost all candidates used the correct terminology and demonstrated a broad range of knowledge recall, the higher-achieving candidates demonstrated understanding spanning the full range of the specification, through either commentary or annotation.

Most candidates provided effective and useful pictorial evidence of the completed item, in some cases supported by videos of testing. For a proportion of candidates this could have been supported further by additional 'close up' images showing specific features.