

# **1145-21 Technical Certificate in Engineering (Manufacturing Technologies)**

**2018**

**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.

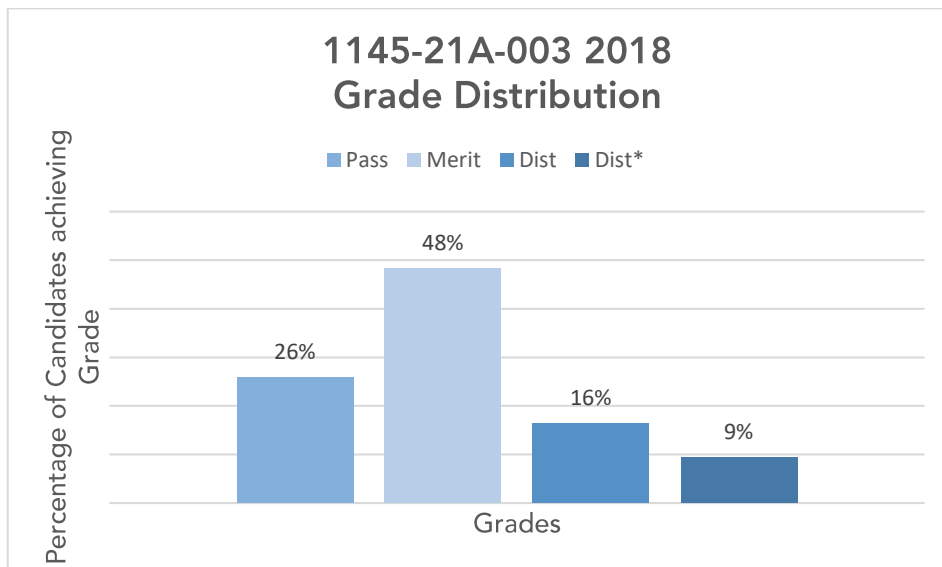
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2018 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments:

- 1145-520 – Level 2 Technical Certificate in Engineering (360) – Theory exam
  - March 2018 (Spring)
  - May 2018 (Summer)
- 1145-025 – Level 2 Technical Certificate in Engineering (Manufacturing Technologies) – Synoptic Assignment

# Qualification Grade Distribution

The 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

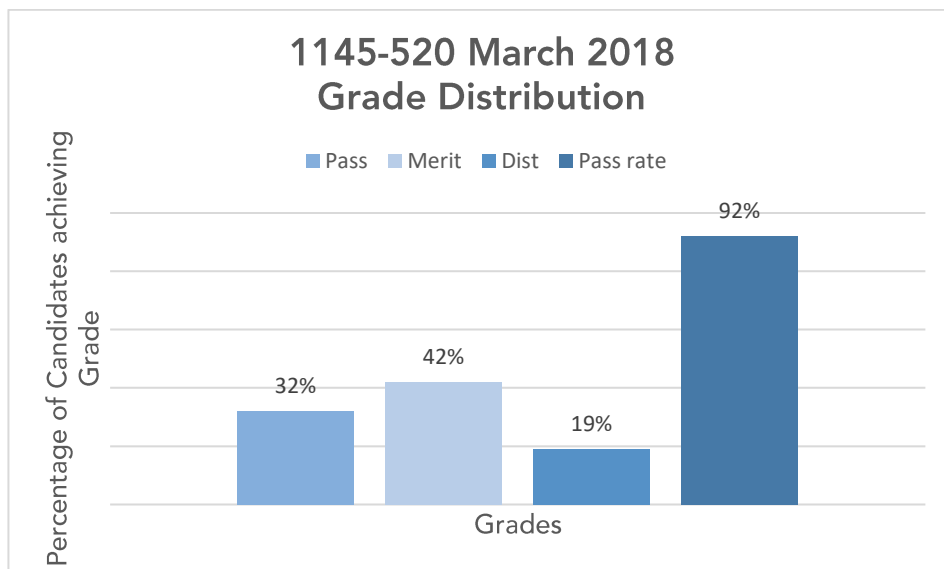
Assessment: 1145-520

Series: March/2018 (Spring)

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

<b>Total marks available</b>	<b>60</b>
Pass mark	20
Merit mark	29
Distinction mark	39

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

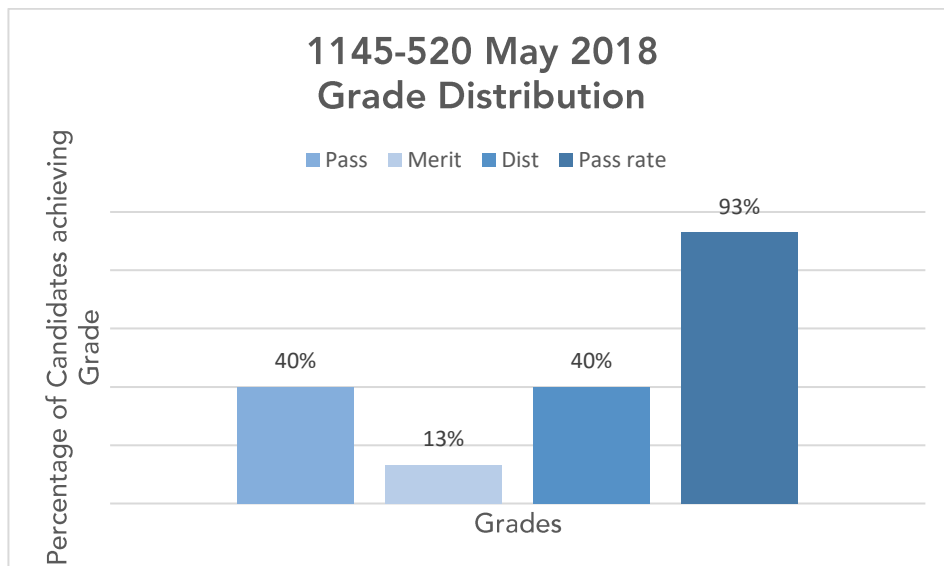


Assessment: 1145-520  
Series: May/2018 (Summer)

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

<b>Total marks available</b>	<b>60</b>
Pass mark	23
Merit mark	32
Distinction mark	41

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



# Chief Examiner Commentary

1145-520 – Level 2 Technical Certificate in Engineering (360) – **Theory exam**

## **Series 1 – March 2018**

The questions and paper as a whole met the requirements of the specification and were pitched at an appropriate level. The standard of the paper was similar in comparison to the previous papers.

In general there was a fair response to this paper by the candidates. However, a significant proportion of candidates left some questions blank not attempted – in most cases the same questions, suggesting common areas of weakness (see individual questions comments).

In addition to the feedback on the specific questions below, some common themes were also noted, relating to drawings, management and maths questions:

Questions where candidates were asked about either the purpose of drawings or to give the meanings of drawing symbols were typically not well answered. It would be expected that candidates should know the symbols listed in the specification.

Questions on management and organisation were typically not well answered, indicating limited breadth of knowledge on this topic.

Whilst the maths questions were often answered well, a notable proportion of candidates did not fully show their working and therefore missed out on marks.

Candidates gave a wide range of responses to the synoptic questions. These questions clearly indicated that there was a broad range of candidate abilities. In some cases this indicated good breadth but limited depth of knowledge, particularly in making processes or material characteristics; however, particularly in the case of the longer synoptic question, the candidate responses to this question lacked structure, and would have benefited from planning or identifying the key points before attempting the question.

## Series 2 – May 2018

The questions and paper as a whole met the requirements of the specification and were pitched at an appropriate level. The standard of the paper was similar in comparison to the previous papers.

In general, this paper was well answered by the candidates. Most 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.

In questions on drawing symbols and stakeholders, the depth of knowledge demonstrated was typically limited. Continuing the trend from the previous paper, the questions applying maths to engineering were often answered well, although a notable proportion of candidates did not fully show their working and therefore missed out on marks. When questions asked for explanation of specific points, most candidates demonstrated good understanding.

The synoptic questions and questions requiring longer answers were typically answered well and demonstrated the range of candidate abilities. Similar to the previous series, in some cases the responses lacked structure and would have benefitted from more planning or identifying the key points before attempting the question.



# Synoptic Assignment

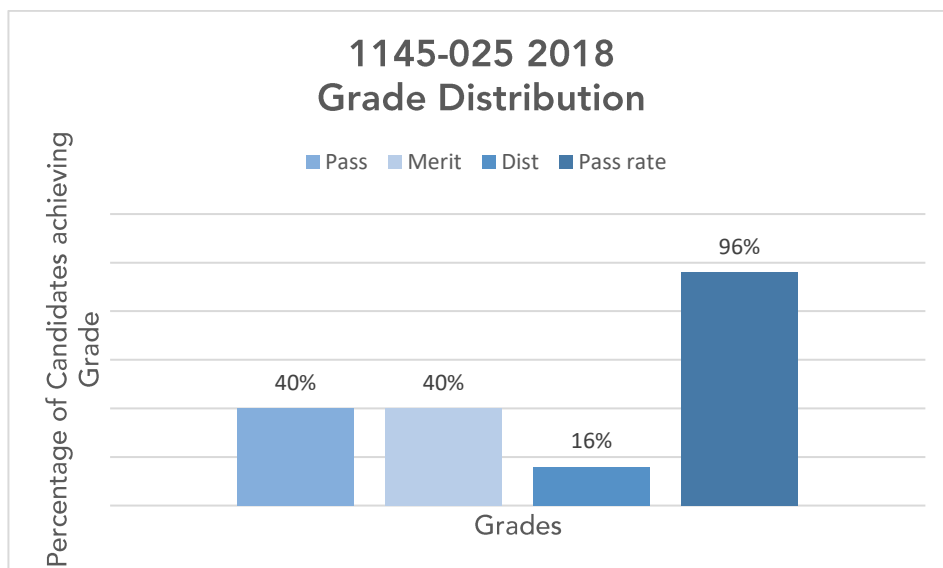
## Grade Boundaries

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

Assessment: 1145-025  
Series: 2018

<b>Total marks available</b>	<b>60</b>
Pass mark	23
Merit mark	32
Distinction mark	41

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



## Principal Moderator Commentary

The assignment was similar in level to the previous series. This view was reinforced by the evidence provided by the candidates, which was sufficient, valid and of appropriate quality to support marking and moderation.

The assignment involved the manufacture of a toolmakers clamp using manual and computer-controlled machines. This was carried out as a series of structured tasks, specified in the assignment brief. The assessment objectives assessed by this assignment were AO1 (Recall of knowledge), AO2 (understanding), AO3 (practical skills), AO4 (bringing it together) and AO5 (attending to detail / perfecting).

AO1 (recall of knowledge) was generally well evidenced, with bills of material, production plans, risk assessments and evaluations of the manufacturing process all using appropriate technical terms.

AO2 (understanding) was generally well evidenced. The evidence provided by most candidates included risk assessments and production plans that implicitly demonstrated the practical application of understanding; in some cases, reasons were given for the processes selected, demonstrating best practice. Evidence could have been improved by including increased annotation on the programmes for the computer-controlled machines, to indicate clear understanding of the sequence of activities being carried out.

AO3 (practical skill) was in general appropriately evidenced. Most centres included pictures of the manufacturing processes in progress, with supporting relevant commentary on the practical observation form. The best practice observed included pictures of the individual components, annotated with details of the manufacturing processes used.

AO4 (bringing it all together) was typically well evidenced, particularly in the production planning, justification of the processes used and the evaluation of components.

There were substantial differences between centres in how AO5 (attending to detail) was evidenced. The best practice was to include both test record sheets, with the results of objective dimensional measurements, and subjective evaluations of parts and the final assembly carried out by the candidates. These were typically supported by subjective comments by the tutor assessor on the practical observation form.

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