



# 1145-30 Level 3 Advanced Technical Certificate in Engineering

2016/17

**Qualification Report**

# Contents

Introduction.....	3
Qualification Grade Distribution.....	4
Theory Exam.....	5
Grade Boundaries .....	5
Chief Examiner Commentary .....	6
Synoptic Assignment.....	8
Grade Boundaries .....	8
Principal Moderator Commentary .....	8

# 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.

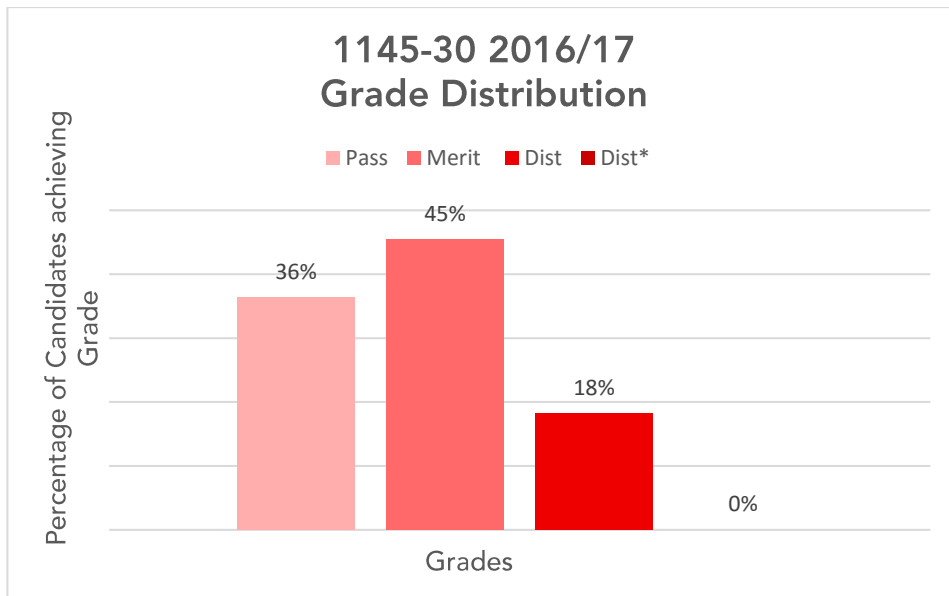
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2017 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments;

- 1145-031 Level 3 Engineering – Synoptic Assignment
- 1145-530 Level 3 Engineering – Theory exam
  - April 2017
  - June 2017

# Qualification Grade Distribution

The grade distribution for this qualification during the 2016/2017 academic year 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.

# Theory Exam

## Grade Boundaries

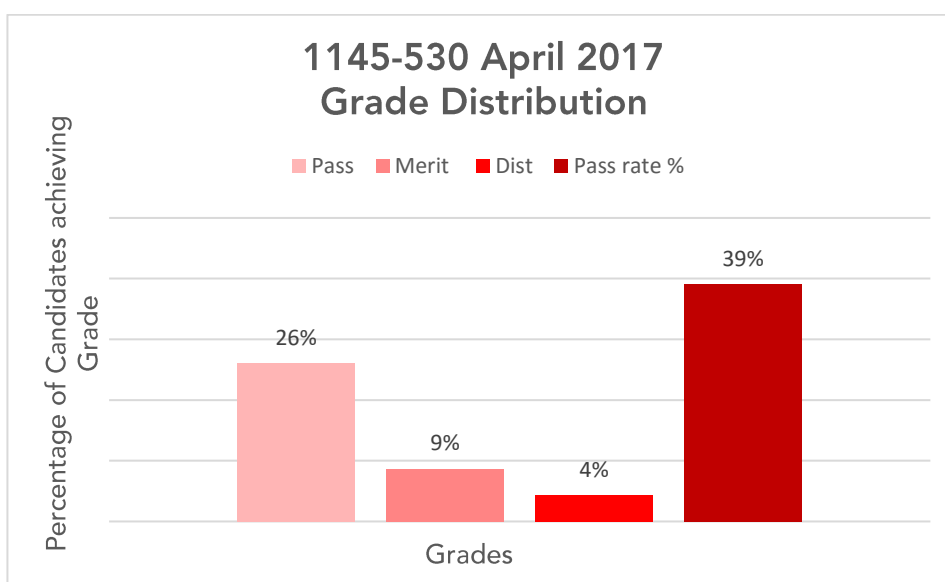
Assessment: 1145-530

Series: April 2017

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

<b>Total marks available</b>	<b>100</b>
Pass mark	40
Merit mark	55
Distinction mark	70

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



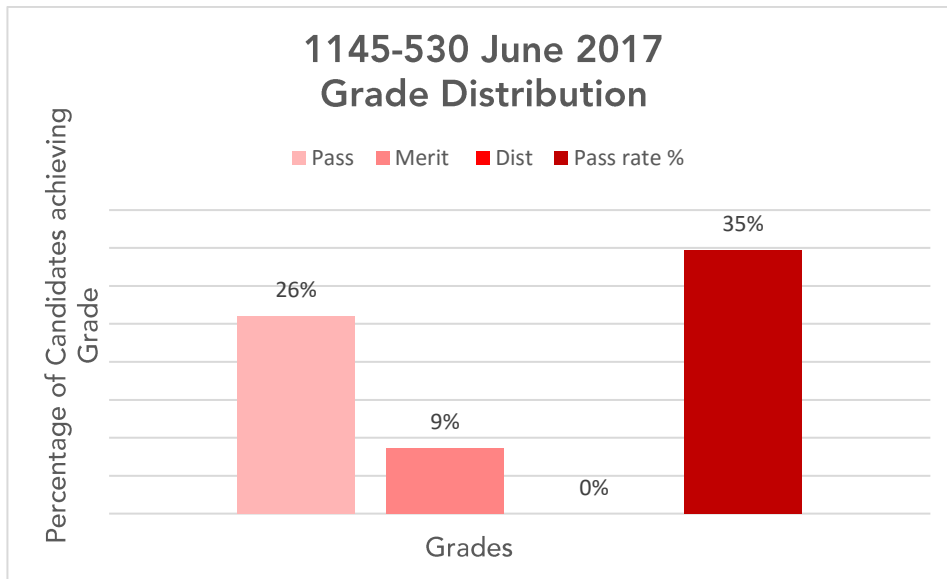
Assessment: 1145-530

Series: June 2017

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

<b>Total marks available</b>	<b>100</b>
Pass mark	40
Merit mark	55
Distinction mark	70

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



## Chief Examiner Commentary

### 1145-30-530 Level 3 Engineering – Theory exam

#### Series 1 – April 2017

This is the second cohort of learners to complete this qualification. 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 paper.

In general this paper was not well answered by the candidates. Many candidates left some questions blank or unattempted – in most cases the same questions, suggesting common areas of weakness.

Some common themes were noted, relating to material properties and maths questions, as follows:

Questions where candidates were asked to define or show knowledge of material properties were not well answered. It would be expected that candidates should know the definition of the different properties listed in the specification.

It should be noted the maths questions are of increasing difficulty in the paper, i.e. the earliest maths questions are a similar standard to key stage 4/GCSE short answer types; the later questions increasing progressively up to strong Level 3 standard. However, many candidates did not successfully answer at least some of the 'easier' questions and the questions involving statistical analysis were typically not well answered. Further, of those who attempted the maths questions, a substantial proportion of candidates did not fully show their working and therefore missed out on marks.

That said, candidates again gave fair or good responses to the synoptic questions. These questions clearly indicated that there was a broad range of candidate abilities.

## Series 2 June 2017

This is the second cohort of learners to complete this qualification. In both series this year, the questions and paper as a whole met the requirements of the specification and were pitched at an appropriate level. The standard of the papers was similar in comparison with the previous papers.

The relatively small numbers of learners limits the conclusions that can be drawn. However, in general neither paper this year was well answered by the candidates. This was not related to the content or presentation of the paper, but the candidates approach to it. Many candidates left several questions blank/unattempted – in most cases the same questions, suggesting common areas of weakness.

In particular, issues were identified with relation to candidates' knowledge of material properties and maths:

Questions where candidates were asked to define or show knowledge of material properties were not well answered. It would be expected that candidates should know the definition of the different properties listed in the specification.

It should be noted the maths questions are of increasing difficulty in the paper – i.e. the earliest maths questions are a similar standard to key stage 4/GCSE short answer types, the later questions increasing progressively up to strong Level 3 standard. However, in both series many candidates did not successfully answer at least some of the 'easier' questions and the questions involving statistical analysis were typically not well answered. Further, of those who attempted the maths questions, a substantial proportion of candidates did not fully show their working.

That said, candidates again gave fair or good responses to the synoptic questions. These questions clearly indicated that there was a broad range of candidate abilities – this is certainly borne out by the standard of language used in their responses.

# Synoptic Assignment

## Grade Boundaries

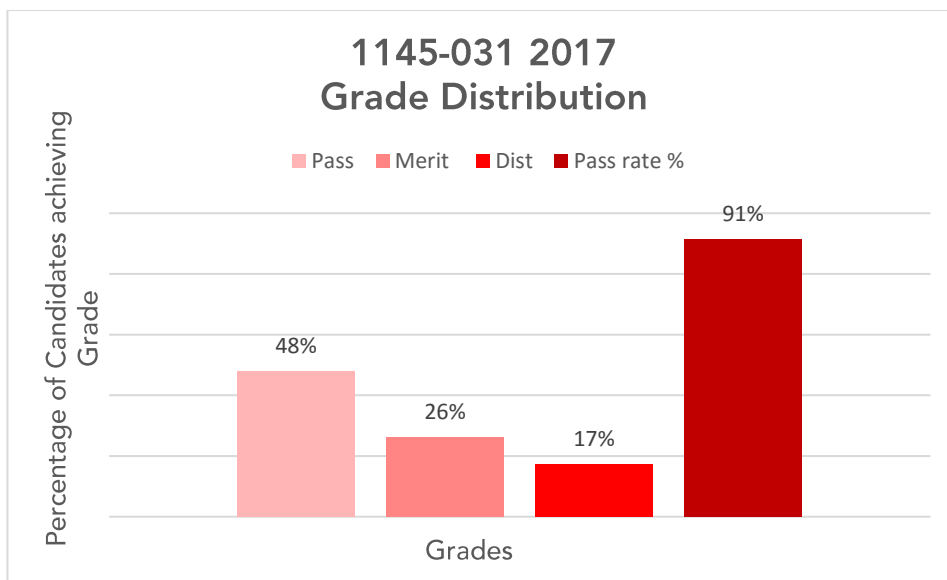
Below identifies the final grade boundaries for this assessment, as agreed by the awarding panel;

Assessment: 1145-031

Series: 2017

<b>Total marks available</b>	<b>60</b>
Pass mark	26
Merit mark	36
Distinction mark	46

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



## Principal Moderator Commentary

The assignment was considered to be 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.

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.

In general, candidates performed better in the assignment than in the written exam. In particular, candidates performed well in the recall of knowledge (AO1) and the application of technical skills (AO3). Typically candidates did not perform as well when demonstrating understanding (AO2).

Recall of knowledge (AO1) was generally well evidenced, with materials lists, production plans and project evaluations all using appropriate technical terms. Additionally, many drawings were annotated to identify materials or components used and other appropriate features.



Understanding (AO2) was typically not evidenced well. A large proportion of candidates included some reasons for the selection of materials or the manufacturing processes to use; some candidates included annotations on design ideas that explained the reasons for features (rather than just identifying the feature). Evidence could have been improved by including more detailed explanations for the components selected and supporting calculations, particularly for the electrical circuits; also, annotations on CAM programmes (where included) would have been beneficial, to show that candidates understood the main features of the operation.

Application of practical/technical skills (AO3) was typically very well evidenced, including pictures, witness statements and print outs of CAD/CAM programmes. Risk assessments were often included, but tended to be too general, rather than addressing the needs of individual processes in detail. Evidence could be improved by using a Hazard/risk/control measure approach for risk assessments and by including test record sheets for the finished products.

Bringing it all together (AO4) was, in general, appropriately evidenced, particularly in the final evaluation. Many candidates carried out some forms of suitable measurement and reflectively identified appropriate improvements. This was also supported by explanations in the selection of the materials and the manufacturing processes used. Evidence could have been improved by giving more detailed reasons for the selection of mechanical components, in terms of functionality and the properties of the materials used.

Attending to detail (AO5) was typically appropriately evidenced through the drawings provided by candidates. This could have been improved by including links to the specification at several points through the activity, to demonstrate that all needs were being considered.

Originality and creativity (AO7) was effectively demonstrated through the candidates design ideas. This could have been improved by consideration of a broader range of materials and / or manufacturing processes.

Communication (AO8) was mainly evidenced through candidates' drawings and the reflective evaluation. Where CAD was used for working drawings, many candidates included the necessary dimensions and followed appropriate conventions. However, there were a few candidates who either did not include all the necessary dimensions or used unconventional presentations.