6720-34 Level 3 Advanced Technical Certificate in Constructing the Built Environment

Qualification Report

Contents

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.
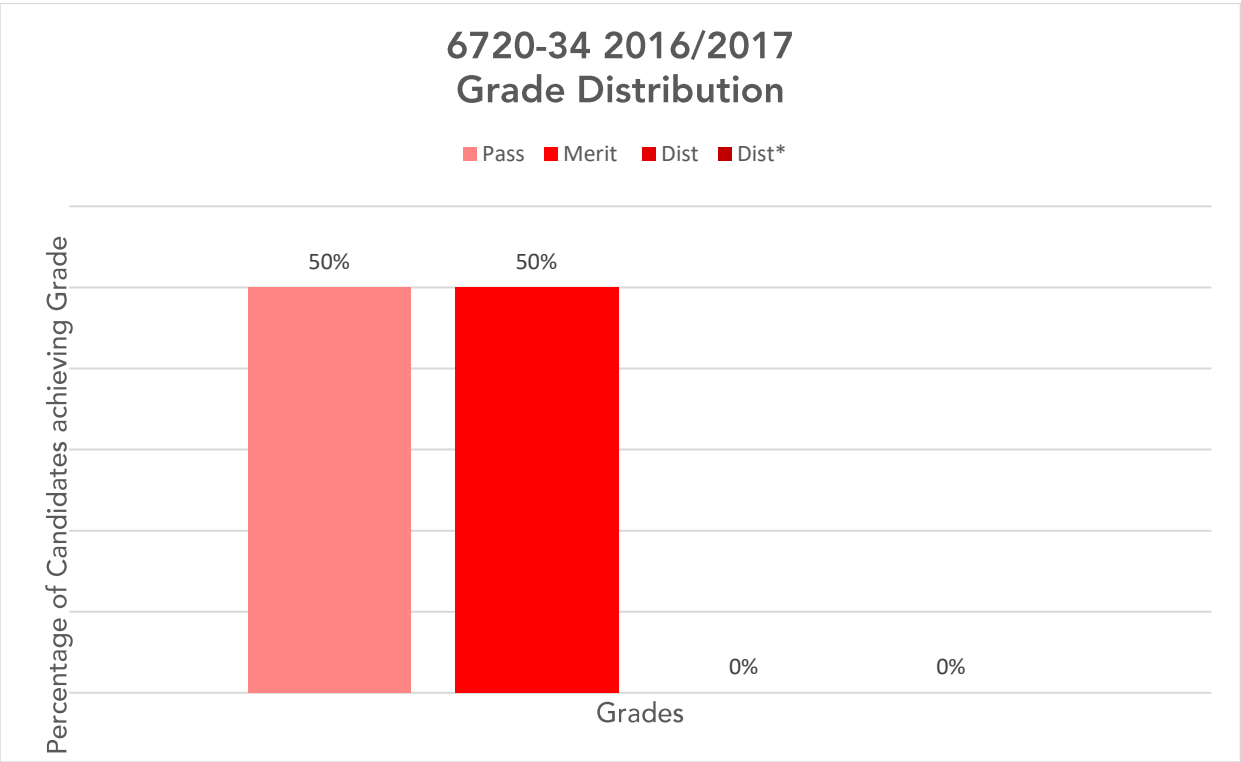
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2016/2017 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments;

- 6720-040/540 Constructing the Built Environment – Theory Exam
  - April 2017
  - June 2017
- 6720-041 Level 3 Constructing the Built Environment – Synoptic Assignment

Qualification Grade Distribution

The grade distribution for this qualification during the 2016/2017 academic year is shown below;

6720-34 2016/2017
Grade Distribution

■ Pass ■ Merit ■ Dist ■ Dist*

Percentage of Candidates achieving Grade

50%   50%   0%   0%

Grades

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.
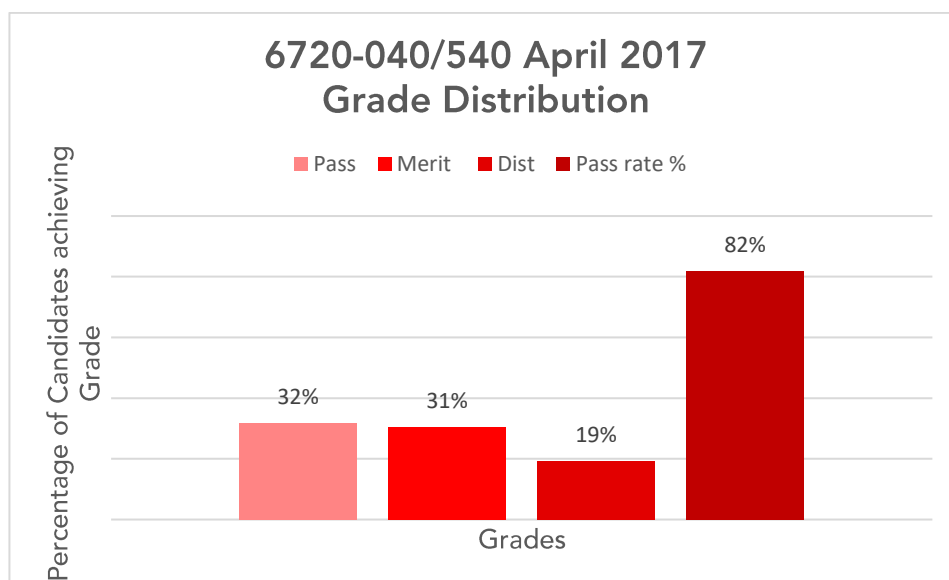
Theory Exam
Grade Boundaries

Assessment: 6720-040/540
Series: April 2017

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

Total marks availible	60
Pass mark	26
Merit mark	33
Distinction mark	41

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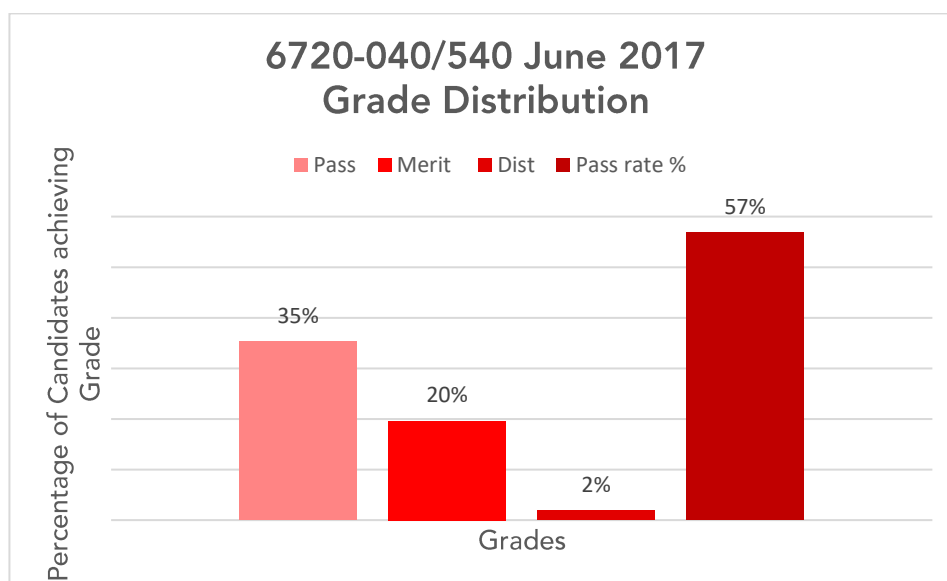

Assessment: 6720-040/540
Series: June 2017

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

Total marks availible	60
Pass mark	24
Merit mark	32
Distinction mark	41

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

6720-040/540 June 2017 Grade Distribution

Legend: ■ Pass ■ Merit ■ Dist ■ Pass rate %

Y-axis: Percentage of Candidates achieving Grade
X-axis: Grades

- Pass: 35%
- Merit: 20%
- Dist: 2%
- Pass rate %: 57%

Chief Examiner Commentary

6720-34-040/540 Constructing the Built Environment – Theory exam

Series 1 – April 2017

An effective paper that covered the specification in an appropriate manner.

Candidates were able to answer most questions to a reasonable standard but generally many did not take advantage of the opportunity to access higher marks when asked for advantages and disadvantages in areas of construction such as diaphragm walls. Also many displayed a poor understanding of what a substructure was. This could highlight a need for wider and deeper learning of concepts and methods of construction in these areas.

Some areas of health and safety where not grasped very effectively, such as hazardous substances. There was a good grasp of the risks and hazards associated with working with Asbestos by a large number of candidates, but some candidates gave responses which suggested their understanding was that this material was no longer dangerous. This should be highlighted going forward to confirm understanding. In terms of training around health and safety, the majority of candidates where able to recall that the CSCS card demonstrates the completion of training, however few were able to achieve full marks by identifying that it has the purpose of a 'permit to work'.

Candidates struggled to demonstrate depth of knowledge when asked to recall the units of measurements for relative humidity and luminous intensity. It is expected the candidates are able to recall the acceptable values for these factors and therefore should be able to recall the unit of measurement.

Candidates generally grasped the basics of corrosion, particularly with regard to metal, but the understanding of underpinning scientific principles was not evidenced meaning candidates were unable to access higher marks.

When asked a question on the impacts of global pollution, candidates were able to recall the effect that pollution is having, however did not detail the impact this has, failing to fully explain the issues they raised, preventing access to full marks.

Within the mathematics aspect of this qualification, candidates showed they could tackle simple calculations but the majority struggled to calculate Cartesian coordinates. This was an evident weakness across all candidates within this series.

The extended response question produced a range of good answers that enabled the candidates to show their understanding in a wider context and make suggestions as part of their discussions, rather than simply recall knowledge or demonstrate understanding. There was a clear correlation between how well the candidates did in the first six questions and how well they were able to answer this question, and the students who did well throughout generally earned a mark in the top mark band.

The paper performed well and was of a standard both clearly at the appropriate level and similar in content, range and difficulty to the earlier paper taken in April 2017 and those taken in previous series. The language was at the appropriate level and there should have been no problems for the candidates in understanding the questions.

When asked about the monitoring of environmental impact, namely EIAs, the marker often found that the answers provided required a lot of scrutiny to identify the candidate's knowledge and understanding of this topic area. Candidates tended to understand when an EIA was performed and what it is intended to do. This usually was rewarded with one or two marks. Candidates that also mentioned ways in which the environmental impact could be reduced, and were able to give examples of the kind of impacts looked for, scored more highly.

Candidates struggled to score marks against the topic area of common construction forms, When asked to determine the difference between two techniques some candidates were able to give a basic description of 'cross wall' construction but very few demonstrated any knowledge of what a 'fin wall' was. This was disappointing, given the importance of the construction technology units to the qualification, it is recommended that time is taken to study the range of the content within this topic area.

Candidates should be encouraged to take time to study what the question was asking for, there were occasions where a question had asked for properties and candidates had responded with techniques.

There was a clear weakness across the cohort of candidates in relation to how lighting can affect human comfort in buildings. There is an expectation within the qualification content that learners must be aware of the different properties of natural and artificial lighting, and must be able to specify both in qualitative and quantitative terms. Candidates did not demonstrate this level understanding in response to a question covering this topic area.

When assessed on the properties of construction materials, the question was very well-answered by some candidates but others confused the terms 'thermal movement' and 'moisture movement' with the movement of either heat or water through the timber, as opposed to the movement of the materials as a result of exposure to changes in either air temperature or moisture content.

This paper again highlighted weakness in the mathematical ability of candidates. Often candidates would dismiss the questions relating to mathematics completely and not attempt to demonstrate any knowledge or understanding, with workings out in response to the question. This was concerning as 13% (8 marks) of this paper is given to the unit Mathematics for the built environment.

The extended response question was moderately well-answered with candidates always able to achieve some marks and, in many cases, obtaining a mark in the middle or towards the top of mark band 2. In general, candidates were clearer about the steel frame and the insulation than they were about the roof. The general level of performance was of a lower standard than in April 2017, which might be expected, but also may be because the ERQ referred to an industrial, rather than a more familiar domestic, scenario.
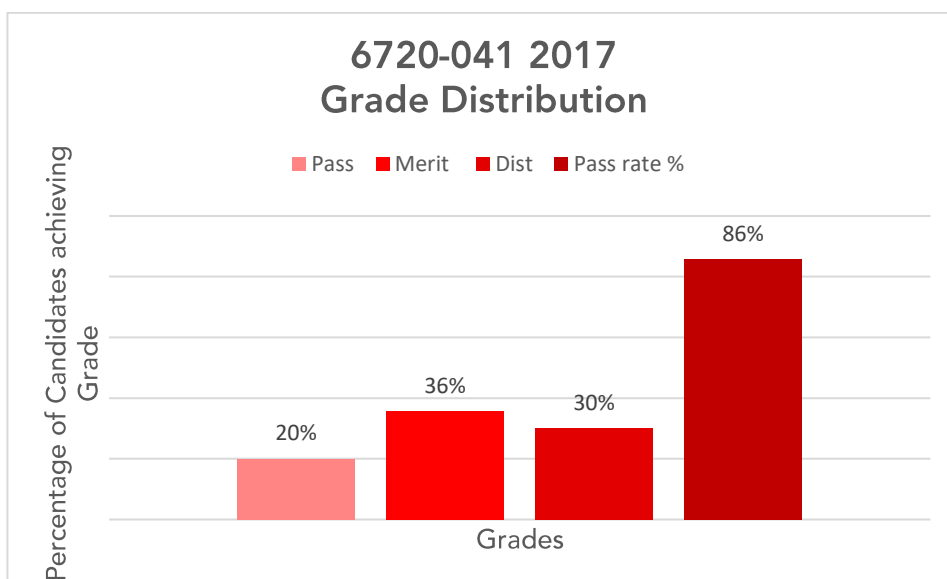
Synoptic Assignment

Grade Boundaries

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

Assessment: 6720-041
Series: 2017

Total marks availible	60
Pass mark	28
Merit mark	37
Distinction mark	47

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

Principal Moderator Commentary

The assignment provided opportunities for candidates to present evidence to support the AOs. The assignment brief, scenario, images and drawing provided were sufficient to explain the areas in which the candidate should research and the areas on which they should report, comment and perform various practical tasks. The outcomes of the set tasks varied from excellent to poor and the marks awarded by the centres, and then sometimes altered by the moderators, reflected this. In terms of individual AOs:

- AO1 was generally of a good standard, with good examples of recall of knowledge, especially for tasks 1, 2 and 3.
- AO2 was of a reasonably standard with moderators only rarely having to adjust marks to address this issue. There was limited evidence of candidates (and centres) confusing 'extensive recall of knowledge' with 'understanding of the how's and why's of that knowledge'. This was generally most evident in tasks 1, 2 and 3.

- AO3 was generally of a good standard, more so in terms of the calculations for the concrete work in task 4. Drawing skills were generally of a lower standard that expected, although acceptable. Those candidates who presented CAD drawings generally did better.
- AO4 was of variable quality with higher marks being obtained where recall of knowledge was linked to understanding in tasks 1, 2 and (in particularly) 3.
- AO5 was generally of a good standard, especially in the checking of work such as the concrete calculations and the environmental impact presentation.

There was nothing in the work as presented, the internal centres assessment and the external moderation to suggest that the marks awarded were not an accurate reflection of the candidates' performance.

The evidence submitted demonstrated that the majority of candidates have addressed the synoptic assignment and the tasks fully and it's clear the centre had taken the time to ensure the candidates were focused to the brief. Centres have embraced holistic marking and executed this well across the board. The standard of assessment has been good and consistent across the board.

Centres must ensure that candidates are well prepared for assessments and they have access to the appropriate resources, tools and equipment that are to an industry standard. It was evident during the moderation and awarding process that some candidates had not been given access to certain resources, such as industry standard drawing equipment. In some cases this created a barrier to candidates assessing higher marks for AO3.