6720-35 Level 3 Advanced Technical Diploma in Constructing the Built Environment

2016/17

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;

- 6720-042/542 Constructing the Built Environment – Theory Exam
  - April 2017
  - June 2017
- 6720-043 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;
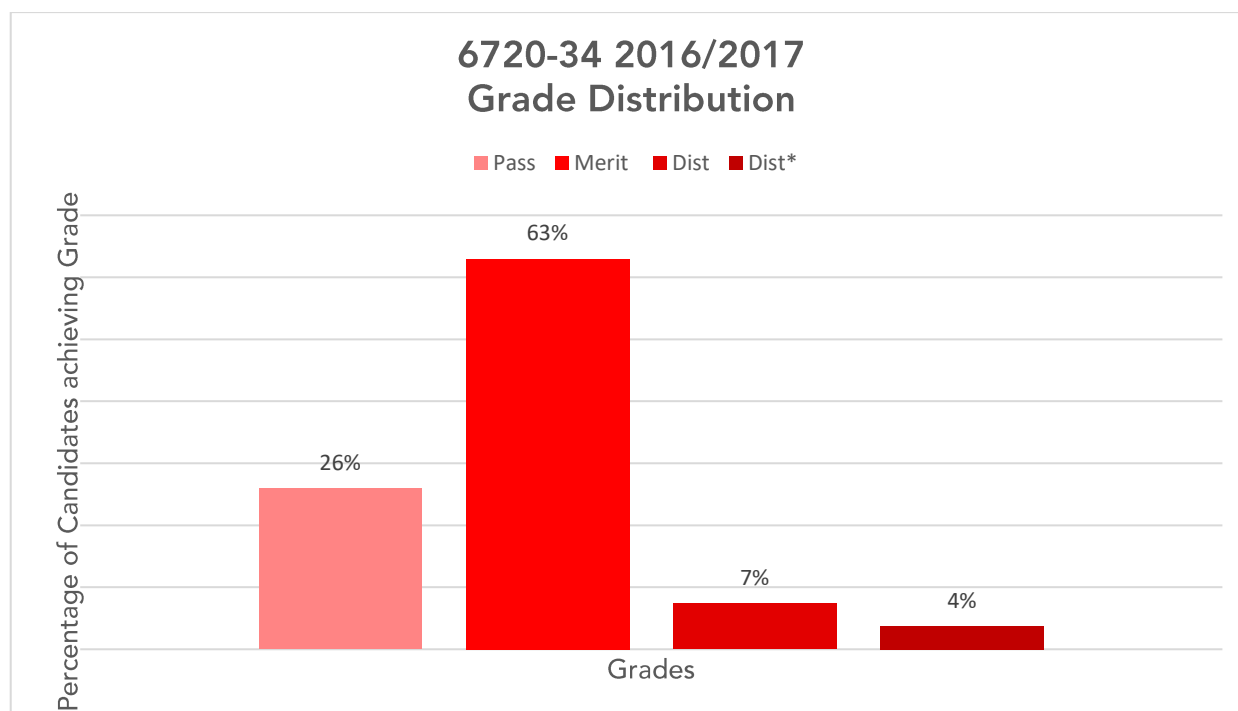
Please note City & Guilds will only report qualification grades for candidates who have achieved all of the required assessment components, including Employer Involvement, optional units and any other centre assessed components as indicated within the Qualification Handbook.
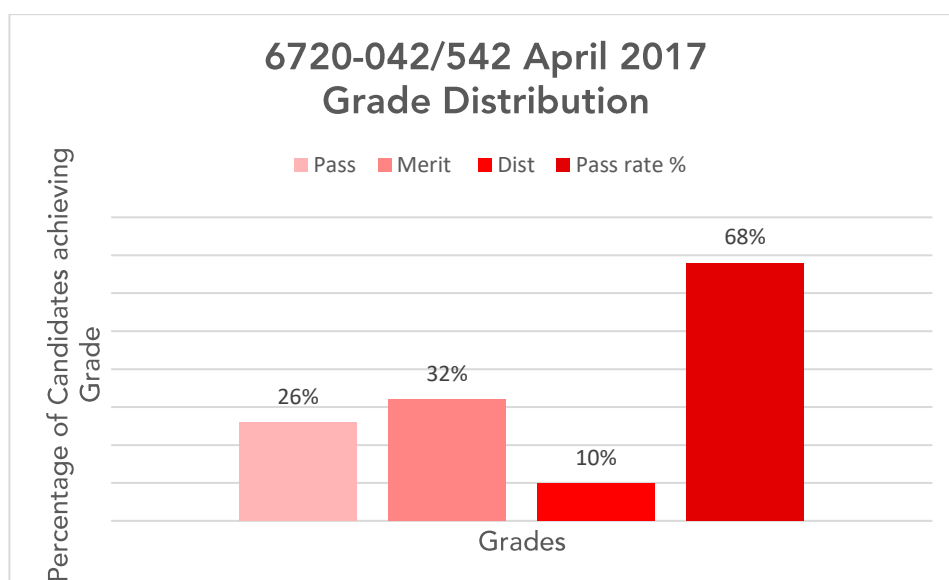
Theory Exam

Grade Boundaries

Assessment: 6720-042/542
Series: April 2017

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

Total marks availible	90
Pass mark	36
Merit mark	48
Distinction mark	61

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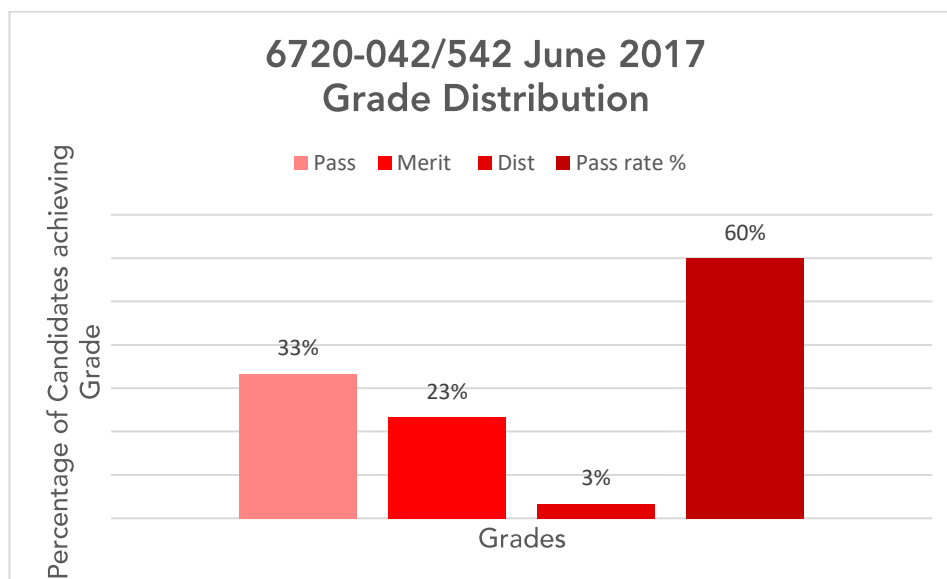

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6720-042/542 June 2017
Grade Distribution

■ Pass ■ Merit ■ Dist ■ Pass rate %

Percentage of Candidates achieving Grade

33%
23%
3%
60%

Grades

Chief Examiner Commentary

6720-35-042/542 Level 3 Constructing the Built Environment – Theory exam

Series 1 – April 2017

On the whole there were some excellent answers that where short and succinct, showing confident application of recall and/or understanding and these candidates achieved high marks. There was evidence of candidates giving lengthy answers, which were repetitive and often contradictory; candidates appeared to waste a lot of time writing answers where they seemed to hope writing more would mean a greater possibility of achieving marks. There needs to be clear and succinct evidence that the candidate possess the relevant knowledge and understanding by recalling facts correctly or demonstrating a deep understanding of a concept.

Candidates were able to answer most questions to a reasonable standard but generally many did not take advantage of the opportunity for 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'.

In relation to construction site supervision, there was a reasonable understanding of management function; candidates were able to recall the external bodies that a site supervisor may need to liaise with. With regard to working with project documentation, scheduling and planning, candidates were unable to demonstrate depth of knowledge regarding the different

documentation they would be exposed to on site. Many candidates were unable to identify what a door schedule was and therefore were unable to demonstrate understanding of the potential impacts of not using them.

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 principals was not evidenced meaning candidates were unable to access higher marks.

On the theme of tendering, candidates showed strong understanding of negotiated tendering routes and many candidates gained reasonable marks on this subject. Candidates that recognised the reasons why a client might go straight to an experienced specialised company scored better in this area than candidates who didn't demonstrated this understanding. Candidates that were unable to provide this explanation tended to struggle and commented on financial savings and speed of the process which, although theoretically correct, was not supported with reasoning.

Candidates were unable to demonstrate knowledge relating to the tendering process. Candidates are required to understand what factors may impact upon this process and therefore should have been able to recall the process itself.

Half of the candidates demonstrated basic understanding of the benefits and use of software built into total stations to aid setting out. Candidates could summarise the effects of software on total stations but struggled to expand upon this. The responses suggested that some candidates may not be familiar with a total station, having never seen or used one.

When asked 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 (ERQ) was generally well answered with nearly every candidate being able to produce work that earned them a mark that was in the middle mark band, and often near the top of that mark band. There was a clear correlation between how well the candidates did in the first nine questions and how well they were able to answer the extended response question, and the students who did well throughout generally earned a mark in the top mark band. This would indicate that they have the facts and the understanding to apply their knowledge correctly.

The ERQ produced a range of good answers that enabled the candidates to make suggestions as part of their discussions, rather than simply recall knowledge or demonstrate understanding.

Series 2 – June 2017

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 higher marks.

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.

Most candidates demonstrated a knowledge of terms 'net' and 'gross' figures, however candidates struggled to identify and differentiate what the specific technical language of 'prime cost' and provisional sums' refers to within tendering and estimating.

Questions which assessed candidates understanding of how to build up a tender figure demonstrated that some candidates were only able to show a basic level of recalling the steps of the process rather than demonstrating their understanding of the concept by detailing the considerations a contractor would make. Where only a generic recall of the process was given marks were not awarded.

In the topic of site surveying, candidates demonstrated very limited knowledge of the adjustment procedures used for levelling. Most did not appear to know that the two-peg test was used to check a level, and instead described how a level would be used to determine heights.

This paper featured a simultaneous equation for candidates to solve, there were three typical responses, in roughly equal groups. The first group simply ignored the requirement to use simultaneous equations and obtained no marks. The second group worked through the problem in the generally accepted manner, reached the correct answer and, of course, were awarded full marks. The third group simply wrote down some answers, without showing any working. Often, they got the answers correct and were awarded the marks. This is however a risky policy. Anyone writing down an incorrect answer will get no marks whatsoever. Candidates should always be encouraged to show their working.

In the extended response question, Part (a) was not well answered. The question asks the candidates to explain how the Building Regulations are used and, by association, where they apply. A list of the relevant Approved Documents would only attract a single mark, at most. Part (b) was better answered, with most candidates able to distinguish between the services needed for the bedroom and the bathroom. Candidates usually mentioned the need for heating but wrongly assumed that this means that the bedroom needed gas. There only needs to be a gas supply to the boiler, which was not in the loft. Part (c) was generally well answered with many candidates achieving the middle or top of mark band 2 and some even mark band 3. The main issue was that some candidates write too much and simply write about any possibility that came into their minds. Some of this was contradictory.

A common theme seen across scripts is the use of generic answers in the hope that the odd mark might be picked up here and there. Some candidates answer with a mixture of time, cost, quality, sustainability and health and safety, to any question where they do not know the answer. This simply does not work and centres should be dissuaded from encouraging this approach.
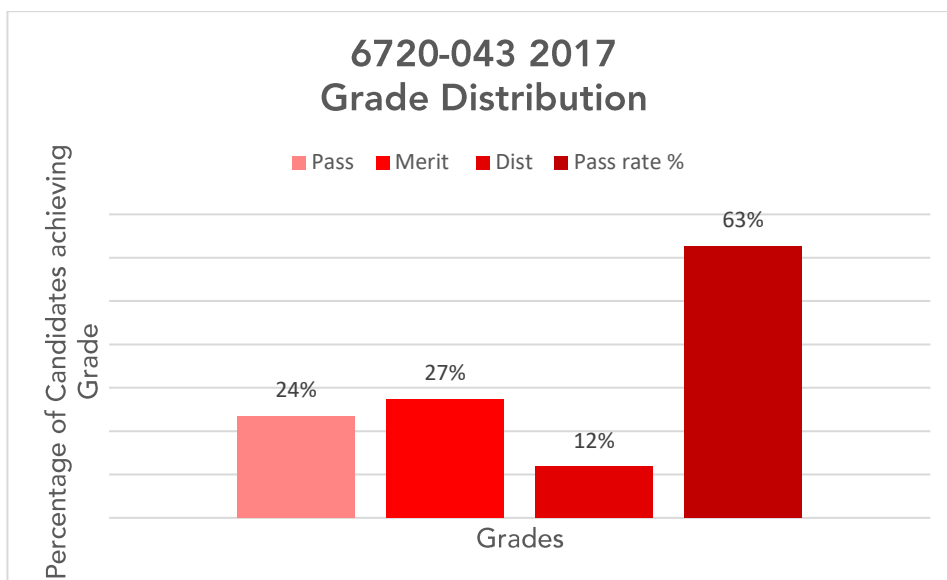
Synoptic Assignment

Grade Boundaries

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

Assessment: 6720-043
Series: 2017

Total marks availible	60
Pass mark	27
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 4.
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 4.

AO3 was generally of a good standard, more so in terms of the calculations for the setting out of the curve and the concrete work in task 3. Drawing skills were generally of a lower standard than expected, although acceptable. The presentation for task 4 was generally executed well.
AO4 was of variable quality with higher marks being obtained where recall of knowledge was linked to understanding in tasks 1, particularly 2 and 4.
AO5 was generally of a good standard, especially in the checking of work such as the concrete calculations and the presentation on the estimating of building costs

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.