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# Principal Moderator Feedback

## Summer 2010

GCE

## GCE Engineering: 6935 01
## The Engineering Environment

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**Principal Moderator Report GCE Engineering**
**Unit 5 The Engineering Environment**

It is pleasing to see that the majority of centres are assessing accurately for unit 5, and that the standard of work tends to improve each series. However, there is a low number of centres who seem to allow some weak candidates onto the programme, or their preparation for the assessment is misguided.

A few centres also seem to ignore the moderator's feedback each year and tend to submit portfolios which hardly cover the 'E' boundary work, resulting in poor overall results for their candidates. The purpose of moderator feedback is to provide guidance on how the results can be improved year on year, and thankfully, most centres seem to take note of it.

It is essential to work with a real engineer, and even after 4 or more years, a few centres still try to provide adequate guidance to their students by allowing them to complete the assessment using the internet only, without venturing into industry. This is not a qualification that can be learned by searching the internet for information without meeting engineers and finding out exactly what they do, the environment in which they work and all the relevant factors which impact on them.

A few centres also allow candidates to include massive amounts of printouts from the internet or leaflets and documents obtained from industry, perhaps to show that they have done something. All that is required is a brief description and explanation about the documents and how they are used, etc, without increasing the bulk unnecessarily. A reducing number of candidates are submitting 2 to 300 pages of printouts from websites, with highlighter marks indicating where they obtained details from. It seems that they have never heard of referencing, whereby the website is all that is needed, not a download of the total contents.

A small number of centres are using work experience to obtain evidence for unit 5, and generally this is working well.

A few of centres are advised to seek PD&T in order to present the qualification accordingly to prevent their learners being excluded from opportunities. There are a few centres which seem to operate within consortia and the potential administrative issues can lead to delays in results if the correct paperwork and procedures are not duly followed.

The candidates' work was across the usual range, mostly ranging from adequate to good. Some portfolios were excellent, and many were not.

a) Standards were generally related to the product, although some centres went to great length listing a broad range, but few seem to know how to use the collection of material to help candidates climb up the mark bands. Those who venture no further than the internet tend to make obvious comments, such as 'an engineer would probably use.....' instead of seeing one and reporting on what actually happens.

   A pleasing number of centres now appear to be focusing on the actual requirements of the specifications, and some high scores are being awarded, correctly, for making appropriate BS and ISO references, indicting a deeper understanding of the requirements of this unit.

b) The use of documentation was generally described, but lacked the details how it was used or why. A few candidates contained large appendices, but fortunately, not many, and those that did just 'put material in it' without reference. This attracts no marks, so please ensure that candidates don't do it. Some centres included examples of parts manuals, company policies, etc, and some that were for different products to the one investigated. No such manuals are neede3d – and attract no marks.

   The vast majority of centres, and most candidates, actually did very well on this criterion and scored some high marks by listing a few documents and describing them, their purpose and use by the engineer – in 2 to 4 pages.

c) Energy efficiency was addressed in a similar way to previous series. Low energy light bulbs and economical cars the company uses, were mentioned, but not much to do with the engineer or product/service under investigation and very little difference across a whole centre. Candidates often mixed this up with the effects on the environment. Many centres and candidates covered this well, including details of efficiency assessment, reducing the use of power, installing a range of relevant insulation, other green issues, etc, and several scored close to a top mark of 12. It is essential from each candidate to ask their engineer about this, as with all the other sections, or the portfolios can only contain general comments at best, which limits progression through the mark bands.

d) Environmental impact was covered generally quite well, probably as much from general knowledge than specialist investigation. Waste materials, emissions, landfill and noise for surrounding areas were included and discussed by many candidates. Where 'c' and 'd' and been mixed together, although acceptable, it is difficult to allocate marks. Where this occurs, it is essential for the assessor to annotate the work in order to help indicate where each part is addressed. This will help a remote moderator to agree with the score, or not.

e) The technologies section is very similar to section 'b' of 6932, but a deeper understanding is expected at A2 than at AS. The usual CAD/CAM is always included, although some candidates did include some detailed descriptions and justified the significance of the systems they had seen in use. Scores were generally very high for this section, but a large number still seem to interpret 'technology' as just 'machinery. This is a part the technologies, such as CNC, CAD/CAM, etc used by engineers, but the use of mobile phones, internet, laptops, PDAs, cameras, satellite navigation, and many other applications of new technologies are not included by almost half of the candidates who submit work.

f) Modifications, following on from the evaluations were generally weak. They usually tend to include one or two good ideas, but it is difficult to determine whether they were really achievable due to inadequate details being provided. Some basic ideas were suggested, and ones that would probably cost far too much money, were mentioned, but not explained in depth. Some candidates were generously graded for this section.

As with unit 2, a long term developmental relationship with an engineer or a company does tend to help the performance of candidates across all learning outcomes, much more than a single visit and walk round the place of employment.

Statistics

Grade Boundaries 6935 The Engineering Environment

| Grade | Max. Mark | * | A | B | C | D | E |
|---|---|---|---|---|---|---|---|
| Raw Boundary Mark | 60 | 55 | 51 | 44 | 38 | 32 | 26 |
| UMS | 100 | 90 | 80 | 70 | 60 | 50 | 40 |

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