

Moderators' Report/
Principal Moderator Feedback

Summer 2013

GCE Engineering

Unit 6932_01

The Role of the Engineer

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Unit 6932

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Most centres submitted the samples before the deadline. A minority did not include signed authentication sheets and were contacted requesting these. Further, some samples did not use the standard mark record sheet, with some centres using copies of the unit specification for this. Centres are reminded to use the correct form and annotate this to indicate the evidence and where it is located. Annotation should also be recorded throughout the student work. Some centres demonstrated good practise in doing this, although a number of centres submitted samples that had no annotation evident. Centres are also meeting the presentation format using a single treasury tag to secure the work. The inclusion of plastic wallets of various forms is unnecessary and should not be used by centres when sending samples for moderation.

This year, there were some centres that did not, or were unable to use a local company for the focus of the investigation. Centres are reminded to keep the focus on an engineer for this unit and relate the tasks to the work the engineer does. Historical engineering does not really fit in this category as standards, technologies and evaluations would all be either out of date or long since improved on. Students should be encouraged to investigate a current local engineer where possible, with the emphasis on both terms. Plumbers and motor mechanics would not be classed as engineers, so roles of this type should also be avoided.

Some centres are encouraging students to produce sections targeted at each mark band, which is useful, although this must actually explain, or justify if the marks are to be awarded, rather than simply fit into the section.

Assessment Criterion 'a'

It was clear from the samples that some students were able to access real engineers and others were not. For those that did, the quality of the activities described was high and detailed descriptions were evident. Some students described a range of engineers in this category, rather than focusing on the single engineer. The best way to get evidence for this task is to speak to the engineer regularly if possible and get the real detail of what they do. Students should avoid writing a diary of events for the engineer, for example a typical day. This will not provide the detail required for this section as it is just a snap shot of the activities. It is better to discuss with the engineer, what the role involves and then use this to describe, explain and justify what the engineer does.

Assessment Criterion 'b'

In the technologies section a range were identified, although as in past series, CAD/CAM and communications were popular. There were some good descriptions and justifications why these technologies were used. Some students briefly described real technologies in favour of communication and overlooked some obvious opportunities to describe process control systems and PLCs for their engineer. A small number of students described simple tools such as standard hand tools or lathes that would not be classed as technologies for this section.

Assessment Criterion 'c'

Student work often omits anything other than H&S Act and then focuses on standards. How the engineer ensures standards are met (especially any mention of audits that such engineers might be expected to undertake) is neglected. There was some lenient marking as a result of this in some samples. Some students' evidence for this section overlapped with section (d). When awarding mark band 3 to the students, the assessor must ensure that compliance and the possible consequences of non-compliance are both evident. At times, despite both not being covered, full marks were awarded. There were some good samples that clearly stated the legislation or standard and linked this to the engineer and the product or service they produced. The unit guidance provides a wide range, so centres should direct students towards these.

Assessment Criterion 'd'

As in previous series, many students focused on the HASAW act as the main standard for this section. This led to general statements and some obvious internet sourced material that was listed without any real link to the engineer. There was some good evidence also in this section, with some standards identified and clearly linked to the product. Again, at the higher mark band, students need to clearly explain how the engineer ensured that the standards were met. There were some brief statements that tried to cover this, although some lacked the depth for the full marks.

Assessment Criterion 'e'

Some of the products that the students investigated were very complex. The centre must ensure that the engineer investigated with the product will allow a useful evaluation that can identify some areas for development for the improvement section. Often the products were complex and students struggled with evaluating the product, instead focusing on some factory systems or even communications such as tablets or mobile phones. Within this section students should try to get data so that they can meet the higher bands. Testing is also important so students should also consider this when identifying the engineer at the start of the project. In this section, if a student has chosen a historical engineer, problems occur when evaluating and simple statements are evident. Centres are rewarding QWC for this section, with clear statements evident to support those at the higher mark bands.

Assessment Criterion 'f'

Overall, modifications were simplistic across many samples. Students appeared to struggle with this section, possibly due to the engineer investigated or the complexity of the product without having a sound knowledge of what it actually does. A sound evaluation will lead to improvements in this section. There was some evidence of diagrams to describe how the modifications would be introduced, although this was not common. Students tended to focus on energy issues and suggested solar panels and wind turbines. Some companies may decide on these, but the student should really consider if this is actually going to make a difference to the product, is it relevant to the report and if it can be introduced.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

<http://www.edexcel.com/iwant to/Pages/grade-boundaries.aspx>

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