National 5 Engineering Science

Guidance on gathering key evidence for producing estimates in session 2020–21

This document provides subject-level guidance to SQA approved centres on gathering key evidence to support estimates for National 5 Engineering Science in session 2020–21. You should read this guidance alongside *National Courses: guidance on gathering evidence and producing estimates* and the SQA Academy resource, *Quality assurance of estimates for National Courses*.

This document also includes information on subject-level assessment resources.

Gathering key evidence to produce estimates for National 5 Engineering Science

Every year you provide estimates for your candidates. This document and *National Courses: guidance on gathering evidence and producing estimates* will give you additional support and guidance to support your decision making for session 2020–21. Evidence should be gathered later in the course, as a realistic reflection of a candidate's attainment. It is important to note that it is not the **quantity** of evidence, but the **quality** of evidence, in relation to its predictive value, that will support you during the estimation process.

The following types of key evidence are likely to provide a good predictive value and may be helpful, although there may be other types of key evidence you feel you would like to use.

Types of key evidence and assessment resources

While evidence to support an estimate can come from a variety of sources (including naturally-occurring evidence during learning and teaching), there are certain types of evidence that provide a clearer indication of candidate ability. Typically, these closely represent the normal components of course assessment:

- question paper (69% of the marks of a candidate's grade)
- assignment (31% of the marks of a candidate's grade)

You can use the following types of evidence to help determine a candidate's ability and to decide on an estimated grade.

We have listed the evidence in order of what might be the most useful in the current situation. However, you are not obliged to use them or to use them exactly as they are.

1 Internally assessed question paper

Performance in an internally assessed question paper (closely matching the live question paper) is an excellent indication of candidate attainment, as it replicates 69% of the normal allocation of marks.

Ideally, a question paper of the same duration, mark allocation, demand, and content sampling as the live question paper. You can find full details of the question paper in the National 5 Engineering Science course specification available on SQA's website.

2 Class tests

Class tests are good indicators of candidate attainment. These tend to focus on specific content areas and may have a shorter duration than an internally assessed question paper, but are still of value when considering candidate attainment.

Whether a class test is similar to a question paper or an assignment, you must consider the demand of the class test when determining its value (for example, if it only contains grade C questions or the opportunity to demonstrate grade C skills, it cannot be an indication of grade A performance).

Likewise, a single class test cannot demonstrate integration or retention of knowledge or skills over time. This would not be indicative of the overall attainment of a candidate, but a series of class tests could support an estimate.

3 Past paper assignment

The application of practical skills and practical problem solving is important in National 5 Engineering Science, however, because of the current situation, assessing in this way is impracticable for many centres. That is why we will not provide an assignment for session 2020–21.

A past paper assignment is a good indication of candidate attainment and you could use this to support an estimate, if you are able to. However, as it only represents 31% of the normal allocation of marks, you would have to supplement it with other types of evidence.

An assignment of the same duration, mark allocation, demand, and content sampling as the live assignment is ideal. You can find full details of the assignment in the course specification.

Delivery and assessment

All course content must still be delivered. However, there is no requirement to have evidence of every skill and every area of content. You should holistically review each candidate's performance when determining their estimate grade.

Demand

The demand of evidence must also be considered. Demand is typically defined in two ways — by the content being assessed and by the nature of the assessment.

The following illustrates demand in a question paper and an assignment:

Question paper

Content — some content is more straightforward than others. Grade C content is knowledge relating to different types of engineers or engineering, the identification of electronic of pneumatic components, or similar. Grade A content is a more detailed knowledge of complex engineering processes, or similar.

Nature of assessment — there are different ways that we can assess using a question paper. Grade C assessment is typically questions asking candidates to 'name' or 'state', or where candidates perform simple calculations (such as the relationship between voltage, current and resistance in a simple circuit), or similar. Grade A assessment is typically asking candidates to 'describe' or 'explain', or where candidates perform complex calculations (which could include multiple stages or transposition), or similar.

Assignment

Nature of assessment — there are different ways that we can assess using an assignment. Grade C assessment is typically when candidates demonstrate simple engineering skills and processes, or similar. Grade A assessment is when they demonstrate complex engineering skills and processes, or similar.

Using additional assessment resources for session 2020–21: key information

It is important that you use valid and reliable assessment when gathering evidence to produce estimates for National 5 in session 2020–21.

In National 5 Engineering Science, SQA will provide a question paper and marking instructions for session 2020–21, which you can use when gathering evidence to support your estimates. Please note that the marking instructions have not been standardised based on candidate responses. You may therefore need to agree within your centre how to consistently mark an item if a candidate response is not covered by the marking instructions.

The National 5 question papers and marking instructions will only be available on SQA's secure website — you must treat these confidentially, in the same way as other live assessment materials.

You should carefully consider how best to use these materials to support candidates, to integrate with your programme of learning, and to help you collate evidence of candidate attainment. Given current public health advice and to maximise learning and teaching time, it is important to stress that there is no expectation that schools and colleges hold a formal diet of prelims for National 5. One of the key reasons for moving to an alternative model was to create additional teaching time through removing the need for prelims and replacing the final examination diet with more flexible classroom-based assessment.

If you use a question paper in part or in its entirety, you should remind candidates that they must not discuss the content of the paper with anyone, including friends, family or on social media.

Further guidance and exemplification

Examples of how to apply the marking instruction for the question paper and assignment are available for National 5 Engineering Science on SQA's Understanding Standards website.