

Course report 2026

Advanced Higher Engineering Science, SCQF level 7

We've written this report for teachers and lecturers. We recommend you read this with the published course assessment documents and marking instructions.

The report:

- provides a summary of how each course component performed
- highlights areas of the question paper and coursework where candidates performed well and areas where they did not perform well
- has advice you might find useful when preparing candidates for assessment

For information about the project, you should read the verification summary 2025-26 on the Advanced Higher Engineering Science [subject page](#) of our website.

We collect and prepare the statistics in course reports before we complete the appeals process.

Statistical and grade boundary information

Course entries

Number of resulted entries in 2025: 58

Number of resulted entries in 2026: 34

Distribution of course awards (including minimum mark to achieve each grade)

Course award	Number of candidates	Percentage	Cumulative percentage	Minimum mark required
A	9	26.5	26.5	103
B	11	32.4	58.8	89
C	8	23.5	82.4	75
D	0	0	82.4	61
No award	6	17.6	100	Not applicable

We've not applied rounding to these statistics.

In this report:

- 'Most' means greater than or equal to 70%.
- 'Many' means 50% to 69%.
- 'Some' means 25% to 49%.
- 'Few' or 'a few' means less than 25%.

You can find [statistical reports](#) on our website.

General commentary on grade boundaries

Our main aim when setting grade boundaries is to be fair to candidates across all subjects and levels, and to maintain comparable standards across the years, even as arrangements evolve and change.

For most National Courses, we aim to set examinations and other external assessments and create marking instructions that allow:

- a competent candidate to score a minimum of 50% of the available marks (the notional grade C boundary)
- a well-prepared, very competent candidate to score at least 70% of the available marks (the notional grade A boundary)

It's very challenging to get the standard on target every year, in every subject, at every level. Therefore, we hold a grade boundary meeting for each course to bring together all the information available (statistical and qualitative) and make final decisions on grade boundaries based on this information. Senior Qualifications Scotland staff normally chair these meetings.

Principal assessors use their subject expertise to evaluate the performance of the assessment and propose suitable grade boundaries based on the full range of evidence. We can adjust the grade boundaries as a result of the discussion at these meetings. This allows the pass rate to be unaffected in circumstances where there is evidence that the question paper or other assessment has been more, or less, difficult than usual.

- We can adjust the grade boundaries downwards if there's evidence that the question paper or other assessment has been more difficult than usual.
- We can adjust the grade boundaries upwards if there's evidence that the question paper or other assessment has been less difficult than usual.
- If levels of difficulty are comparable to previous years, we maintain similar grade boundaries.

Every year, we evaluate the performance of our assessments in a fair way, while ensuring standards are maintained so that our qualifications remain credible. To do

this, we measure evidence of candidates' knowledge and skills against the national standard.

For full details of the approach, please refer to the [Awarding and Grading for National Courses Policy](#).

How the course assessment performed

Question paper

Overall, the question paper performed as intended.

Answers to section 1 reflected the intended level of demand of the questions.

Question 6(b) had the highest proportion of candidates not answering.

Section 2 was more demanding; particularly question 9, as many candidates did not answer, or did not gain marks in the final parts of this question.

We considered these factors when setting grade boundaries.

How candidates performed

Not all candidates completed the question paper. In section 1, most candidates performed well. In section 2, most candidates did not answer question 9. However, most candidates performed well in question 8, with the exception of question 8(e).

Areas where candidates performed well

Question paper (section 1)

Question 1(a)	Most candidates correctly calculated V_{out} for a digital to analogue converter (DAC) system.
Question 2(a)	Most candidates correctly completed the activity network and identified the critical path.
Question 2(b)	Many candidates accurately described an activity that a project manager would complete.
Question 3	Most candidates used an unfamiliar formula and correctly calculated the flowrate of the water.
Question 7(a)	Most candidates correctly calculated the shear force and showed all their working.
Question 7(b)	Many candidates correctly calculated the bending moment and showed all their working.

Question paper (section 2)

Question 8(a)	Many candidates determined the number of teeth required on the ring gear.
Question 8(b)	Most candidates correctly calculated the magnitude and direction of the reaction at the bearing; however, they did not show a sketch of the direction of the force in relation to x-y-z axes.
Question 8(c)(i)	Most candidates correctly wrote the equation for V_2 from the graph.

Question 8(c)(ii)	Many candidates used the equation in its simplest form for V_3 by referring to the circuit diagram.
Question 8(c)(iv)	Many candidates correctly calculated the value and gained full marks. However, some candidates did not answer this question.
Question 9(a)	Most candidates correctly calculated the maximum stress and accurately stated where it occurred. However, many candidates made errors converting units to make them consistent, and some misinterpreted where the maximum stress occurred.

Areas where candidates did not perform well

Question paper (section 1)

Question 1(b)	Some candidates did not determine the measured output voltage of the DAC for the given binary input.
Question 4(a)	Most candidates did not discuss what they were asked about the graph but instead described what the graph might be telling them.
Question 4(b)	Many candidates did not correctly calculate the efficiency of the power transmission. Some candidates correctly calculated the current for the secondary winding but did not accurately calculate the power. Some candidates did not consider the power loss for power out.
Question 5	Some candidates gained 1 mark for correct expressions for components. However, most candidates did not acknowledge that the torque must be balanced for constant rotation or that both gears were on the same shaft, with many candidates taking the diameter and not the radius for calculations.

- Question 6(a) Most candidates successfully drew the load line, but many did not determine the drain-source voltage and drain current at the Q point.
- Question 6(b) Candidates who answered this question gained full marks however, most candidates did not answer it.

Question paper (section 2)

- Question 8(c)(iii) Most candidates did not identify the time taken to reach saturation, some candidates did not label the axes, and a few inaccurately sketched the graph.
- Question 8(d) Most candidates answered this question. Many candidates made errors in the initial determination but gained marks for the remainder of the calculations that were correct, relative to the initial error.
- Question 8(e) Most candidates did not identify that the output was stuck on 5.
- Question 9(b) Most candidates did not complete this question beyond identifying the equations required from the data booklet. Most candidates did not correctly manipulate the formula.
- Question 9(c) Many candidates did not correctly convert units to make them consistent with the rest of the formula.
- Question 9(d)(i) Many candidates did not correctly determine the resolution of the analogue to digital converter (ADC). Some candidates did not answer this question.
- Question 9(d)(ii) Many candidates did not correctly determine the digital equivalent of a 2.15 V input.
- Question 9(e) Most candidates did not accurately explain why two passive strain gauges were included in the circuit.
- Question 9(f) Most candidates did not use nodal analysis to write an expression for R.

Preparing candidates for assessment

Question paper

- Remind candidates not to round their working in calculations until they reach a final value. They should round to the correct number of significant figures, following the instruction on the front page of the question paper.
- Encourage candidates to make sure the numerical value is accompanied by the correct units (as appropriate) for the quantity calculated and preferably expressed in engineering notation (as given on page 5 of the data booklet). Engineering notation conflicts with the standard (or scientific) notation used in Mathematics and Physics. However, the 'ENG' button on most scientific calculators, gives any final answer with a power of 10 that candidates can replace by the appropriate decimal prefix.
- Help candidates correctly convert units to make them consistent with the rest of the formula. When substituting values in formulae, candidates must adjust the orders of magnitude of variables, so that their units are consistent with one another. Question 9(c) from this year's question paper is a good example.
- Make sure candidates practise questions with a range of command words. In particular, if asked to 'discuss', candidates must produce more than a commentary.
- Help candidates identify and label axes correctly when sketching graphs. Integrators are a key topic of electronics in the course and candidates must understand them for the graphical element.
- Encourage candidates to devote significant time to independent reading. Help candidates move their subject knowledge beyond Higher level content and depth of understanding, particularly for the course themes at Advanced Higher level. Increase candidates' ability to respond to questions that require either description, explanation or discussion, and they're more likely to gain all available marks.