

# Engineering Science

## TECHNOLOGIES



### Content

The course has three areas of study:

- Engineering contexts and challenges
- Electronics and control
- Mechanisms and structures



### Skills

Learners will be able to:

- extend and apply knowledge and understanding of key engineering concepts, principles and practice
- understand the relationships between engineering, mathematics and science
- apply skills in analysis, design, construction and evaluation to a range of engineering problems with some complex features
- communicate engineering concepts clearly and concisely, using appropriate terminology
- develop a greater understanding of the role and impact of engineering in changing and influencing our environment and society



### Opportunities for Learners

Learners will be able to:

- develop a deeper understanding of the central role of engineers as designers and problem solvers, able to conceive, design, implement and control complex systems
- understand the far-reaching impact of engineering on our society and the environment
- explore varied engineering systems through simulation, practical projects and investigative tasks in a range of contexts



### Assessment

- The course will be assessed through a question paper (exam) and an assignment, which will be marked by SQA and graded A to D.
- The question paper makes up 69% of the total assessment mark. Areas assessed include: analogue and electronic control systems, structures and forces, drive systems and pneumatics etc.
- The assignment makes up 31% of the total assessment mark. The assignment is a problem-solving activity with a number of tasks to complete. Marks are awarded for: analysis, designing a solution, building the solution, testing and evaluation.



**Question Paper** Section 1: Short answer questions (20 marks)  
Section 2: Structured questions (90 marks)

2 hours 30 minutes  
110 marks

**Specimen Paper** [www.sqa.org.uk/pastpapers/findpastpaper.htm](http://www.sqa.org.uk/pastpapers/findpastpaper.htm)

**Assignment** Learners will develop a solution to an engineering problem, with a record of progress and a report on testing the solution. The assignment is supervised and carried out over 8 hours, starting at an appropriate point in the course once all content has been delivered.

8 hours  
50 marks



**Progression** Higher courses can stand alone or follow on from National 5 qualifications and may lead to Advanced Highers, the Scottish Baccalaureate and a range of qualifications within Further and Higher Education.



For course information, specimen question papers and past paper guidance visit:

Higher Engineering Science: [www.sqa.org.uk/sqa/47928.html](http://www.sqa.org.uk/sqa/47928.html)

Curriculum for Excellence Key Terms and Features Factfile

Education Scotland: <https://education.gov.scot/nationalqualifications>

Further Information for Parents and Learners Information on assessment, skills, progression, revision resources and summaries of National Qualifications

[www.parentforumscotland.org](http://www.parentforumscotland.org)



the National Parent Forum of Scotland

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