Higher Engineering Science (Course Code: C823 76)

SCQF Level 6 (24 Credit Points)

Why study Engineering Science?

Engineering is vital to everyday life; it shapes the world in which we live and its future. Engineers play key roles in meeting the needs of society in fields which include climate change, medicine, IT and transport. Our society needs more engineers, and more young people with an informed view of engineering.

In this course you will develop and extend knowledge and understanding of key engineering concepts and processes, and learn to apply these to a variety of problems. On completing the course you will learn skills in: analysis and problem solving, engineering design, the use of equipment and materials, and evaluation.

The skills you learn from this course are valuable for a wide range of career areas and industries. This includes Engineering, Electronics, Oil, Renewable Energy Production, Science, Mechanics, Construction and the Built Environment.

Career Pathways

To see what career areas this subject could lead to and the routes to get there, download and view these career pathways:

Art and Design

Computing and ICT

Construction

Engineering

Garage Services

Health and Medicine

Transport and Distribution

What do I need to get in?

Entry is at the discretion of the school or college but you would normally be expected to have:

- **National 5 Engineering Science**

What will I study?

The course consists of **three** areas of study.

Engineering contexts and challenges

You will:

- explore a range of engineering problems with some complex features, and their solutions
- explore some existing and emerging technologies and challenges
- consider implications relating to the environment, sustainable development, and economic and social issues.

Electronics and control

You will:

- explore an appropriate range of key concepts and devices used in electronic control systems, including analogue, digital and programmable systems
- develop skills in problem solving and evaluating through simulation, practical projects and investigative tasks across a range of contexts.

Mechanisms and structures

You will develop:

- a deep understanding of mechanisms and structures
- skills in problem solving and evaluating through simulation, practical projects and investigative tasks across a range of contexts.

How will I be assessed?

The course assessment has **two** components **totalling 160 marks**:

- Component 1: question Paper – worth 110 marks (consisting of --two sections: section 1 worth 20 marks, and section 2 worth 90 marks)
- Component 2: assignment - worth 50 marks.

For the assignment component, you will apply engineering science skills and knowledge acquired to complete a problem solving task involving analysis, designing a solution, building the solution, testing and evaluation.

Both the question papers and the assignment are set and externally marked by the Scottish Qualifications Authority (SQA).

The grade awarded is based on the total marks achieved across course assessment.

The course assessment is graded A-D.

Study Materials

- SQA Past Papers Engineering Science Higher

- SQA Specimen Paper Engineering Science Higher
- SQA Understanding Standards Engineering Science
- BBC Bitesize Engineering Science Higher
- Ushare Study Resources

What can I go on to next?

If you complete the course successfully, it may lead to:

- **Advanced Higher Engineering Science**

Further study, training or employment in:

- Art and Design
- Computing and ICT
- Construction
- Engineering
- Garage Services
- Health and Medicine
- Transport and Distribution