National 5 Engineering Science (Course Code: C823 75)

SCQF Level 5 (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

Teaching and Classroom Support

Transport and Distribution

What do I need to get in?

The school or college will decide on the entry requirements for the course. You would normally have achieved:

- **National 4 Engineering Science**

What will I study?

In this course you will develop a broad range of technological skills, including analysis, problem solving and design skills. You will learn how to use equipment and materials, and evaluate products and systems. You will look at key engineering concepts and processes and how to solve a variety of problems. You will also look at the impact of engineering on society and the environment.

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

Engineering contexts and challenges

You will:

- develop an understanding of engineering concepts by exploring a range of engineered objects, engineering problems and solutions
- explore some existing and emerging technologies and challenges and consider the implications relating to the environment, sustainable development and economic and social issues.

Electronics and control

You will:

- explore a 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 in a range of contexts.

Mechanisms and structures

You will develop:

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

How will I be assessed?

Course Assessment

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

- Component 1: question paper (110 marks) – comprising 2 sections, section 1 worth 20 marks and section 2 worth 90 marks
- Component 2: Assignment (50 marks)

The assignment covers a problem solving process and is split into five areas - analysis, designing a solution, building the solution, testing and evaluation.

Both the question paper 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 all course assessment components.

The course assessment is graded A-D.

Study Materials

- SQA Past Papers Engineering Science National 5
- SQA Specimen Paper Engineering Science National 5
- SQA Understanding Standards Engineering Science
- BBC Bitesize National 5 Engineering Science
- Ushare Study Resources

What can I go on to next?

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

- **Higher Engineering Science**

Further study, training or employment in:

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