**ENGINEERING SCIENCE NATIONAL 5**

**CONTENT**

The Course enables learners to develop: a range of technological skills, including skills in analysis and problem solving, design skills, skills in the use of equipment and materials, and skills in evaluating products and systems. The Course also enables learners to develop knowledge and understanding of key engineering concepts and processes, and the ability to apply these to a variety of problems; and an awareness of the impact of engineering on society and the environment. There are 3 units:

**Engineering: Contexts and Challenges**

This Unit provides a broad context for the Course. Its purposes are to develop an understanding of engineering, and its role and impact in changing and influencing our environment and society. It develops an understanding of engineering concepts by exploring a range of engineered objects, engineering problems and solutions.

**Electrical and Electronic Systems**

This Unit explores an appropriate range of key concepts and devices used in electrical and electronic systems, including analogue, digital and programmable systems. Skills in problem solving and evaluating are developed through simulation, practical projects and investigative tasks in a range of contexts.

**Mechanical Systems**

This Unit explores an appropriate range of key concepts involving mechanical systems, such as gears, pneumatics, structures, forces, energy and efficiency. Skills in problem solving and evaluating are developed through simulation, practical projects and investigative tasks in a range of contexts.

**ASSESSMENT**

**Course assessment:**

Component 1 – Assignment. A coursework based project to solve a technological problem, on a topic set by the SQA worth 50 marks.

Component 2 – Question paper. An external exam set by the SQA worth 110 marks.

**HOMEWORK**

Homework will be distributed regularly (mostly weekly) averaging about 30 minutes per week. Homework will be handed out at least one week before it is due in, to give pupils the opportunity to analyse the task and clarify any queries.

**ENTRY REQUIREMENTS**

Entry to the National 5 course is open to students who have a National 4 in Engineering Science.