**ENGINEERING SCIENCE HIGHER**

**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. It contributes to developing a deep understanding of engineering concepts by exploring a range of engineering problems with some complex features, and their solutions. This Unit allows the learner to explore some existing and emerging technologies and challenges, and to consider implications relating to the environment, sustainable development, and economic and social issues.

**Electrical and Electronic Systems**

This Units explores an appropriate range of key concepts and devices used in electronic control 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 develops a deepening understanding of mechanisms and structures. Skills in problem solving and evaluating are developed through simulation, practical projects and investigative tasks in a range of contexts.

**ASSESSMENT**

**Course units:**

All units are internally assessed on a pass/fail basis. These assessments may be on a unit-by-unit approach or by using a combined assessment.

**Course assessment:**

Component 1 – Assignment. A coursework based project to solve a technological problem, on a topic set by the SQA worth 60 marks.

Component 2 – Question paper. An external exam set by the SQA worth 90 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 Higher course is open to students who have a National 5 in Engineering Science or Physics. However students who achieve less than a B pass at National 5 will need to be prepared for the step up in knowledge and depth of answer needed to do well in Higher.