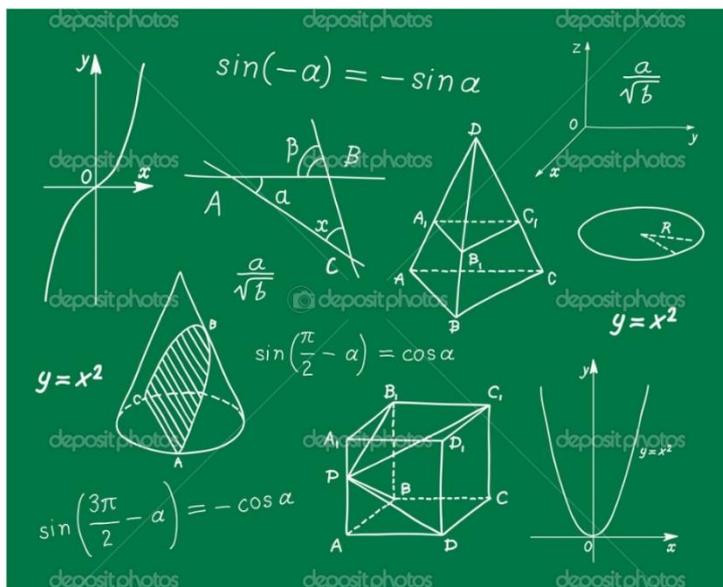# HIGHER MATHEMATICS

Aims

Mathematics is important in everyday life, allowing us to make sense of the world around us and to manage our lives. Using mathematics enables us to model real-life situations and make connections and informed predictions. It equips us with the skills we need to interpret and analyse information, simplify and solve problems, assess risk and make informed decisions.

The course aims to:

- Motivate and challenge learners by enabling them to select and apply mathematical techniques in a variety of mathematical situations.
- Develop confidence in the subject and a positive attitude towards further study in mathematics and the use of mathematics in employment
- Deliver in-depth study of mathematical concepts and the ways in which mathematics describes our world.
- Allows learners to interpret, communicate and manage information in mathematical form; skills which are vital to scientific and technological research and development.
- Deepen the learner's skills in using mathematical language and exploring advanced mathematical ideas.

Progression into this Course

Entry to this course is at the discretion of the centre. Learners would normally be expected to have attained the skills and knowledge required by the following or by equivalent experience:

Mathematics National 5 (preferably at Grade A or B)

Progression from this course/Careers

This course may provide progression to other qualifications in Mathematics or related areas, further study, employment or training.

Course Content

This course will develop, deepen and extend the mathematical skills necessary at this level and beyond. Learners will acquire and apply operational skills necessary for exploring mathematical ideas through symbolic representation and diagrams. In addition, learners will develop mathematical reasoning skills and will gain experience in making informed decisions.

Skills, Knowledge and Understanding

This course will develop learners' ability to:
♦ understand and use a range of complex mathematical concepts and relationships
♦ select and apply operational skills in algebra, geometry, trigonometry, calculus and statistics within mathematical contexts
♦ select and apply skills in numeracy
♦ use mathematical reasoning skills to extract and interpret information and to use complex mathematical models
♦ use mathematical reasoning skills to think logically, provide justification or proof and solve problems
♦ communicate mathematical information with complex features

Course Assessment

The Course assessment will consist of two question papers:

Paper 1 (non-calculator)
This question paper will give learners, without the aid of a calculator, an opportunity to apply numerical, algebraic, geometric, trigonometric, calculus and reasoning skills.
The questions will require short answers and extended responses.

Paper 2
This question paper will give learners an opportunity to apply numerical, algebraic, geometric, trigonometric, calculus and reasoning skills.
The questions will require short answers and extended responses.