

Course Title:	<b>GCE Mathematics (A Level Mathematics)</b>  *Further Mathematics is available for students who achieve Grade A* at GCSE Mathematics and Physics
Title of qualification to be gained (if any):	GCE Mathematics
Awarding Body (if any):	Edexcel
<b>Essential materials:</b> Pen, pencil, rubber, sharpener, ruler (30cm) scientific calculator ( Casio FX)	

<b>Course Aims</b>
The A level Course (GCE) in Mathematics encourage students to develop their understanding of mathematics in a way that promotes confidence and fosters enjoyment. It prompts students to reason logically and develop awareness of the relevance of mathematics to engineering and the world of work.
<b>Course Description</b>
Students study six modules over two years, three each year. The course encourages learners to improve their understanding of Mathematics, its processes and applications, whilst promoting greater confidence and enjoyment in the subject.
<b>Entry Requirements</b>
Students may access this course if they have achieved 5 A* - C GCSE grades including English and Mathematics and at least a Grade B in GCSE Mathematics.
<b>Who is the course for?</b>
A-level Mathematics provides a foundation for further studies in a variety of subjects including Science and Engineering.
<b>Main topics covered</b>
<b>Year 12</b>  Students take two modules in Core Mathematics (C1 and C2) and one application module in Mechanics (M1).  <b>Core 1 and Core 2 develops:</b>  Algebra and functions; coordinate geometry in the $(x, y)$ plane; sequences and series; differentiation; integration; trigonometry; exponentials and logarithms;

**Mechanics develops:**

Mathematical models in mechanics; vectors in mechanics; kinematics of a particle moving in a straight line; dynamics of a particle moving in a straight line or plane; statics of a particle; moments.

**Year 13**

After June in Year 12 students start their A2 course which continues into Year 13 by studying two more Core Mathematics modules (C3 and C4) and another mechanics application module (M2).

**Core 3 and Core 4 develops:**

Algebra and functions; trigonometry; exponentials and logarithms; differentiation; numerical methods; coordinate geometry in the  $(x, y)$  plane; sequences and series; integration; vectors.

**Mechanics 2 develops:**

Kinematics of a particle moving in a straight line or plane; centres of mass; work and energy; collisions; statics of rigid bodies.

**Learning Outcomes**

This qualification in Mathematics encourages students to develop confidence in, and a positive attitude towards, mathematics and to recognise the importance of mathematics in their own lives and its use in engineering.

**Teaching and learning methods used**

Independent work, Discussion, Group Work, Visits

**How your work will be assessed**

Weekly assignments and assessments at the end of each unit in every module

Mock Examinations

Examination – each paper 1hour 30 minutes – all calculator apart from C1

**Suggested progression routes**

Engineering apprenticeships or University

**Pre-course reading/preparation**

Good grounding in algebra from GCSE mathematics