A-level Mathematics

Board and Specification: **Edexcel A2 Mathematics**
KS5 Coordinator: **Mr Simon Reid (s.reid@cwlc.email)**

Subject specific entry requirements:

- Grade 7 in GCSE Mathematics.
- Students should be fluent in both their numeric, algebraic and trigonometry skills from GCSE.
- Before starting the course, students will have completed the A-level Mathematics induction booklet.

What skills are required of students?
Recall of learnt facts, application of new skills, extracting information from texts deciphering "what do I need to do?" problem solving, use of a calculator, formal written methods, interpretation of solutions, choosing the most efficient method, communicating methods clearly, drawing appropriate diagrams, identifying alternative methods of solution, checking the 'reasonableness' of their answer.

Modules titles and codes:

9MA0 3 papers:
Each paper is 2 hours long and the papers are equally weighted. Examinations to take place in the Summer of 2021.
Paper 1:   Pure Mathematics 1
Paper 2:   Pure Mathematics 2
Paper 3:   Statistics and Mechanics

Paper 1 :   Pure Mathematics 1

Proof, algebra and functions, co-ordinate geometry in the (x, y) plane, sequences and series, trigonometry, exponentials and logarithms, differentiation, integration, vectors.

Paper 2:   Pure Mathematics 2

Proof, algebra and functions, co-ordinate geometry in the (x, y) plane, sequences and series, trigonometry, differentiation, integration, numerical methods, vectors.

Paper 3:   Statistics and Mechanics

Section A: Statistics
Statistical sampling, data presentation and representation, probability, statistical distributions, statistical hypothesis testing.

Section B: Mechanics
Quantities and units in mechanics, kinematics, forces and Newton's laws, moments.

What types of work will you do in class and at home?

Home learning tasks could involve embedding the learning from the lesson using questions from text books or worksheets from alternative resources or from past papers. Tasks could also involve pre-reading or revision in preparation for a test or research into a topic. On occasion, students may be asked to prepare a task or an activity that will used in a subsequent lesson.

What other A-levels does your subject connect well with?

Psychology, Geography, Physics, Chemistry, Biology, Business and Computing. In some instances, there is a direct overlap in the contents such as with forces, studied in physics and statistical testing which features in A-level Psychology.

What types of university course will be helped by this A-level?

There are many university courses that require A-level Mathematics, including actuarial studies, engineering, chemical engineering, computing, dentistry, environmental and Earth sciences, economics, electronic engineering, pharmacy, physics and of course mathematics and statistics. Some courses require two or three A-levels from a selection of say 4 subjects of which Mathematics A-level is often an option e.g. geology or medical sciences. For many courses, even though A-level Mathematics is not a prerequisite, it is considered to be very useful.