MATHS

AS and A Level Further Maths

Curriculum content

Half term	Year 12	Year 13
Autumn 1	Unit 1: Complex numbers (part 1) Unit 2a-b: Matrices Unit 1: Poisson and binomial distributions (part 1) Unit 1: Momentum and impulse (part 1)	. Unit 2: Hyperbolic functions Unit 3a: Polar coordinates Unit 6: Hypothesis testing Unit 7: The Central Limit Theorem Unit 5a: Elastic strings and springs and elastic energy
Autumn 2	. Unit 2c-d: Matrices Unit 3: Complex numbers (part 2) Unit 2: Discrete probability distributions Unit 2a-b: Work, energy and power	. Unit 3b: Polar coordinates Unit 4: Further algebra and functions (series) Unit 8: Chi squared tests (part 2) Unit 9a: Probability generating functions Unit 5b: Elastic strings and springs and elastic energy
Spring 1	. Unit 4: Series Unit 5: Algebra and functions Unit 6: Proof Unit 3a-b: Poisson and binomial distributions (part 2) Unit 2c: Work, energy and power	. Unit 5a-c: Further calculus Unit 9b-c: Probability generating functions Unit 6a(i): Elastic collisions in two dimensions
Spring 2	. Unit 7: Vectors Unit 3c: Poisson and binomial distributions (part 2) Unit 4a(i). Chi squared tests (part 1) Unit 3a: Elastic collisions in one dimension	. Unit 5d-e: Further calculus Unit 6a. Differential equations Unit 10a-b: Quality of tests and estimators Unit 6a(ii): Elastic collisions in two dimensions Unit 6b(i): Elastic collisions in two dimensions
Summer 1	. Unit 8: Calculus Unit 4a(ii). Chi squared tests (part 1) Unit 3b: Elastic collisions in one dimension	. Unit 6b-c: Differential equations Unit 10c: Quality of tests and estimators Unit 6b(ii): Elastic collisions in two dimensions
Summer 2	. Unit 1: Complex numbers Unit 5: Geometric and negative binomial distributions Unit 4: Momentum and impulse (part 2)	

MATHS

Skills

 The aims and objectives of this qualification are to enable students to:
● understand mathematics and mathematical processes in a way that promotes confidence, fosters enjoyment and provides a strong foundation for progress to further study
● extend their range of mathematical skills and techniques
● understand coherence and progression in mathematics and how different areas of mathematics are connected
● apply mathematics in other fields of study and be aware of the relevance of mathematics to the world of work and to situations in society in general
● use their mathematical knowledge to make logical and reasoned decisions in solving problems both within pure mathematics and in a variety of contexts, and communicate the mathematical rationale for these decisions clearly
● reason logically and recognise incorrect reasoning
● generalise mathematically
● construct mathematical proofs
● use their mathematical skills and techniques to solve challenging problems that require them to decide on the solution strategy
● recognise when mathematics can be used to analyse and solve a problem in context
● represent situations mathematically and understand the relationship between problems in context and mathematical models that may be applied to solve them
● draw diagrams and sketch graphs to help explore mathematical situations and interpret solutions
● make deductions and inferences and draw conclusions by using mathematical reasoning
● interpret solutions and communicate their interpretation effectively in the context of the problem
● read and comprehend mathematical arguments, including justifications of methods and formulae, and communicate their understanding
● read and comprehend articles concerning applications of mathematics and communicate their understanding
● use technology such as calculators and computers effectively and recognise when their use may be inappropriate
● take increasing responsibility for their own learning and the evaluation of their own mathematical development.

Assessment

This linear A Level Course from Edexcel is examined entirely by examination at the end of Year 13. It is however, broken down into smaller sub-units which you can see based on the long-term curriculum content, and are assessed by the end of each half term. These unit assessments inform whole School progress key Ins and help inform departmental intervention.