KS5 YEAR 13 FURTHER MATHS CURRICULUM OVERVIEW – AUTUMN TERM

SUBJECT: FURTHER MATHS (Y13)

AUTUMN TERM

TERM 1

TEACHER 1

Complex Numbers AS
1a Intro; 1b Complex conjugates; 1c Argand diagrams; 1d Modulus & Argument; 1e Loci

Series AS – 2a Use of Series

Algebra and Functions AS
3a Roots of Polynomials; 3b Transformations; 3c Polynomial division; 3d Partial fractions

Calcus AS – 4a Volumes of Revolution

Proof – 5a proof of induction#

AS assessments

TEACHER 2

Elastic Strings and Springs
Hooke's law; EPE; problem solving including work-energy principle

Elastic Collisions in 1D
Newton's Law of Restitution; successive impacts

Elastic Collisions in 2D
Oblique impact; smooth surfaces; successive impacts

Further Mechanics 1 Assessment(s)

TERM 2

TEACHER 1

Vectors
7a Vectors & Cartesian equations; 7b Scalar Product; 7c Problems involving points, lines, planes

Complex Numbers A2
8a (a+bi)^n: 8b De Moivre; 8c roots of z^n; 8d complex roots of unity

Series A2 – 2a method of differences

Mechanics A1 – M5 mechanic series (based on image)

Mock preparation

TEACHER 2

Further Mechanics 2 – Circular Motion
Radical acceleration; horizontal and vertical circular motion

Centres of Mass of Plane Figures
2D/3D laminae: frameworks; equilibrium in 2D

VIDEO LINKS

Pure Maths link 1 | Pure Maths link 2 | Applied Maths link 1 | Applied Maths link 2

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KS5 YEAR 13 FURTHER MATHS CURRICULUM OVERVIEW – SPRING & SUMMER TERM

		TEACHER 1	TEACHER 2
SPRING TERM	TERM 1	Mocks Further Calculus 3a Improper integrals; 3b Mean Value of Function; 3c Integration using partial fractions; 3d Differentiation under the integral sign; 3e Trigonometric substitutions Further volumes of Revolution	Mocks Further centres of mass Calculus methods; composite bodies; simple equilibrium; sliding & toppling
	TERM 2	Polar Coordinates 4a Convert between Cartesian & polar; 4b Sketch curves; 4c Area enclosed by polar curve Hyperbolic Functions 5a sinh, cosh, inverses; 5b Logarithmic forms; 5c solving hyperbolic equations Differential Equations 6a Solve first order; 6b Solve second order	Variable Acceleration a=f(v) or f(x); calculus methods Variable Force Problems Particle moving in straight line; Newton's Law of Gravitation; SHM
SUMMER TERM	TERM 1	Modelling	SHM (revision/application)

VIDEO LINKS

Pure Maths link 1 | Pure Maths link 2 | Mechanics Maths link 1 | Mechanics Maths link 2

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