Year 13 Further Mathematics Curriculum

OPTION 1

	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
Topic:	Core Pure Mathematics, Statistics and Decision Mathematics		Core Pure Mathematics, Statistics and Decision Mathematics		Core Pure Mathematics, Statistics and Decision Mathematics	
Knowledge Covered:	-**Complex Numbers** (including Exponential form, De Moivre;s Theorem, Trigonometric Identities and Geometric Problems) -**Series** (including the method of differences, Higher derivatives, Maclaurin Series and Series expansions of compound functions) -**Methods in Calculus** (including Improper integrals, Differentiating and Integrating Inverse Trigonometric Functions and Integrating using Partial Fractions) -**Volumes of Revolution** (including Volumes of Revolution around the x and y axes, Volumes of Revolution of parametrically defined curves and Modelling with Volumes of Revolution) -**Geometric and Negative Binomial Distributions** -**Hypothesis Testing** -**The Central Limit Theorem** -**Chi Squared Tests** (part 2) - **Algorithms and Graph Theory (part 2) (**including Planarity and Floyd's Algorithms and Travelling salesman problem) - **Linear programming (part 2)** (including Formulation of problems, Simplex algorithm, Big-M and two-stage Simplex)		-**Polar Coordinates** (including Polar Coordinates and Equations, Sketching Curves, Area enclosed by a Polar Curve, Tangents to a Polar Curve and Series in Complex Numbers) -**Hyperbolic Functions** (including Inverse Hyperbolic Functions, Identities and Equations and Differentiating and Integrating Hyperbolic Functions) -**Methods in Differential Equations** (including Solving First and Second- order Differential Equations and Using Boundary Conditions. -**Modelling with Differential Equations** (including Modelling with First-Order Differential Equations, Simple Harmonic Motion and Coupled First-Order Simultaneous Differential Equations) -**Probability Generating Functions** -**Quality of Tests** (including Type I and II Errors and the Power Function) **-Critical path analysis (part 2)** (including Resource histograms and Scheduling)		**Pure Mathematics Review** **Statistics Review** **Decision Mathematics Review** **Examinations**	
Online resources:	www.mymaths.co.uk, Integral Maths Wrenn School A Level Revision Website					

Year 13 Further Mathematics Curriculum

OPTION 2

	AUT1	AUT2	SPR1	SPR2	SUM1	SUM2
Topic:	Core Pure Mathematics, Decision Mathematics and Mechanics		Core Pure Mathematics, Decision Mathematics and Mechanics		Core Pure Mathematics, Decision Mathematics and Mechanics	
Knowledge Covered:	-**Complex Numbers** (including Exponential form, De Moivre;s Theorem, Trigonometric Identities and Geometric Problems) -**Series** (including the method of differences, Higher derivatives, Maclaurin Series and Series expansions of compound functions) -**Methods in Calculus** (including Improper integrals, Differentiating and Integrating Inverse Trigonometric Functions and Integrating using Partial Fractions) -**Volumes of Revolution** (including Volumes of Revolution around the x and y axes, Volumes of Revolution of parametrically defined curves and Modelling with Volumes of Revolution) - **Algorithms and Graph Theory (part 2) (**including Planarity and Floyd's Algorithms and Travelling salesman problem) - **Linear programming (part 2)** (including Formulation of problems, Simplex algorithm, Big-M and two-stage Simplex) - **Momentum and impulse (part 2)** **-Elastic strings and springs and elastic energy**		-**Polar Coordinates** (including Polar Coordinates and Equations, Sketching Curves, Area enclosed by a Polar Curve, Tangents to a Polar Curve and Series in Complex Numbers) -**Hyperbolic Functions** (including Inverse Hyperbolic Functions, Identities and Equations and Differentiating and Integrating Hyperbolic Functions) -**Methods in Differential Equations** (including Solving First and Second- order Differential Equations and Using Boundary Conditions. -**Modelling with Differential Equations** (including Modelling with First-Order Differential Equations, Simple Harmonic Motion and Coupled First-Order Simultaneous Differential Equations) **-Critical path analysis (part 2)** (including Resource histograms and Scheduling) - **Elastic collisions in two dimensions**		**Pure Mathematics Review** **Mechanics Review** **Decision Mathematics Review** **Examinations**	
Online resources:	www.mymaths.co.uk, Integral Maths Wrenn School A Level Revision Website					