

HIGHFIELDS SCHOOL

CURRICULUM OVERVIEW 2023-2024



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SUBJECT: A LEVEL FURTHER MATHEMATICS

EXAMINATION BOARD: OCR

AUTUMN TERM - YEAR 12	SPRING TERM - YEAR 12	SUMMER TERM - YEAR 12
<p>Statistics</p> <ul style="list-style-type: none"> • Permutations and combinations • Contingency tables • Distributions • Discrete probability distributions <p>Mechanics</p> <ul style="list-style-type: none"> • Dimensional analysis • Energy and the conservation of energy • Linear momentum and restitution <p>Pure Core</p> <ul style="list-style-type: none"> • Proof by Induction • Matrices • Complex numbers • Argand Diagrams • Transformations using matrices • Vectors • Using roots of equations to find solutions 	<p>Statistics</p> <ul style="list-style-type: none"> • Fitting distributions • Dependant and independent variables • Equations of regression lines • Product moment correlation coefficients • Spearman's Rank correlation coefficient • Poisson distributions • Hypothesis testing <p>Mechanics</p> <ul style="list-style-type: none"> • Resolving forces • Impulse • Restitution • Work energy and power • Motion in a circle 	<p>Statistics</p> <ul style="list-style-type: none"> • Non-parametric hypothesis tests • Single sample hypothesis tests • Continuous random variables • Probability density functions <p>Mechanics</p> <ul style="list-style-type: none"> • Hooke's law • Linear momentum in 2D • Oblique impact • Centre of mass of symmetric lamina • Composite rigid bodies <p>Pure Core</p> <ul style="list-style-type: none"> • Proof • Intersection of planes • Exponential forms of complex numbers • Euler's formula and de Moivre's theorem
<p>ASSESSMENT Continual topic-based assessment.</p>	<p>ASSESSMENT Assessment based upon specimen papers.</p>	

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AUTUMN TERM - YEAR 13	SPRING TERM - YEAR 13	SUMMER TERM - YEAR 13
<p>Pure Core</p> <ul style="list-style-type: none">• Vectors• Matrices• Series and Induction• Further Calculus• Polar coordinates• Maclaurin series <p>Statistics</p> <ul style="list-style-type: none">• Continuous random variables• The normal distribution <p>Mechanics</p> <ul style="list-style-type: none">• Centre of mass• Motion under a variable force• Further circular motion	<p>Pure Core</p> <ul style="list-style-type: none">• Hyperbolic functions• Applications of integration• First order differential equations• Complex numbers• Further vectors• Second order differential equations <p>Statistics</p> <ul style="list-style-type: none">• Hypothesis testing• Non-parametric tests <p>Mechanics</p> <ul style="list-style-type: none">• Hooke's law• Oblique impact	<p>Exam Preparation</p> <ul style="list-style-type: none">• General revision• Topic specific revision• Past papers
<p>ASSESSMENT</p> <p>Progress review 1 - Assessment based upon covered topics in each module</p> <p>Progress review 2 - Assessment based upon covered topics in each module</p>	<p>ASSESSMENT</p> <p>Progress Review 1 - Assessment based upon mock exam (full exam paper for each module)</p> <p>Progress Review 2 - Continual assessment in each module</p>	