

# Landau Learner Curriculum Overview

Subject: Mathematics

Director of Learning: Mr R Bathew

Year: 13

Curriculum organisation				
Students are taught in mixed ability by two learning tutors for the equivalent of 10 single lessons per fortnight.				
What topics will students be studying this year? Includes links to National Curriculum, Curriculum Intent and Prior Related Learning*				
Term 1:	Term 2:	Term 3:	Term 4:	Term 5:
Pure: <ul style="list-style-type: none"> <li>Arithmetic series</li> <li>Geometric series</li> <li>Binomial expansion</li> <li>Arcs and sectors</li> <li>Small angle approximations</li> <li>Inverse trigonometric functions</li> <li>Composite functions</li> <li>Inverse functions</li> <li>Modulus</li> <li>Transformation of graphs</li> <li>Partial fractions</li> <li>Points of inflection</li> <li>Chain, Product and Quotient rules</li> <li>Differentiation of exponential and logarithmic functions</li> <li>Differentiation of trigonometric functions</li> </ul>	Pure: <ul style="list-style-type: none"> <li>Addition formulae</li> <li>Double angle formulae</li> <li>R addition formulae</li> <li>Parametric equations</li> <li>Iterative methods</li> <li>Connected rates of change</li> <li>Differentiation of parametric equations</li> <li>Implicit differentiation</li> <li>Integration of exponential and logarithmic functions</li> <li>Integration of trigonometric functions</li> </ul>	Pure: <ul style="list-style-type: none"> <li>Integration using trigonometric identities</li> <li>Using integration to find areas under curves</li> <li>Integration by substitution</li> <li>Integration by parts</li> <li>Integration using partial fractions</li> <li>Newton-Raphson method</li> <li>Trapezium rule</li> <li>Vectors in 3D</li> </ul> Statistics: <ul style="list-style-type: none"> <li>Conditional probability</li> </ul> Mechanics: <ul style="list-style-type: none"> <li>Projectiles</li> </ul>	Pure: <ul style="list-style-type: none"> <li>Differential equations</li> </ul> Statistics: <ul style="list-style-type: none"> <li>Normal distribution</li> <li>Product-Moment Correlation Coefficient</li> <li>Hypothesis tests of the mean of a population</li> </ul> Mechanics: <ul style="list-style-type: none"> <li>Non-uniform acceleration</li> <li>Resolving forces</li> <li>Friction</li> <li>Newton's Laws of Motion</li> <li>Moments</li> </ul>	Not applicable.
Equipment needed for sessions:			What can you do to support your child?	
<ul style="list-style-type: none"> <li>Mathematics exercise book</li> <li>Mathematics textbook</li> <li>Scientific calculator with statistical tables lookup function, e.g. ClassWiz</li> </ul>			<ul style="list-style-type: none"> <li>Encourage them to complete the homework tasks they are set by their Maths tutors to a high standard, asking them to show you the finished work.</li> </ul>	
How will learning be assessed and progress measured?			Extension and enrichment activities:	
<ul style="list-style-type: none"> <li>Marking of written is carried out on a regular basis in line with the College policy</li> <li>Regular class tests when students have covered a topic</li> <li>Trial Examinations and Vivas throughout the year</li> <li>Regular peer and self-marking</li> </ul>			<ul style="list-style-type: none"> <li>Post-16 Maths Clinic – every Tuesday</li> <li>Senior Mathematical Challenge / Senior Team Maths Challenge</li> <li>Mathsbombe</li> <li>Puzzle of the Week</li> <li>ERNI mentoring of younger students</li> </ul>	