

**UTC Maths Department Learning Cycles 2019 – Year 13 Further Maths**

Cycle 2.6	Cycle 2.7	Cycle 2.8	Cycle 2.9	Cycle 2.10
<ul style="list-style-type: none"> <li>○ Maclaurin Series</li> <li>○ Modulus of Functions</li> <li>○ Graphs of modulus functions</li> <li>○ Quadratic theory</li> <li>○ Transformations</li> <li>○ DeMoivres’s theorem</li> <li>○ Use complex roots to solve geometric problems.</li> <li>○ Distinct nth roots</li> <li>○ <math>Z=re^{i\theta}</math></li> </ul>	<ul style="list-style-type: none"> <li>○ Vector and Cartesian forms of equation of a plane</li> <li>○ Calculate Vector products</li> <li>○ Intersections of lines and planes.</li> <li>○ Evaluate improper integrals</li> <li>○ Integrate using partial fractions</li> <li>○ Differentiate inverse trig functions.</li> <li>○ Integrate functions of the form <math>(a^2-x^2)^{-\frac{1}{2}}</math></li> <li>○ Arc length &amp; Surface of Revolution.</li> <li>○ Reduction Formulae</li> <li>○ Exponential limits of integration</li> <li>○ Find the area enclosed by a polar curve.</li> <li>○ Sketching Hyperbolic Functions</li> <li>○ Domains and ranges of Hyperbolic Functions</li> <li>○ Differentiate &amp; Integrate Hyperbolic functions</li> <li>○ Construct proofs using Hyperbolic functions</li> </ul>	<ul style="list-style-type: none"> <li>○ Simple Harmonic Motion.</li> <li>○ Model Damped Oscillations.</li> <li>○ Hookes law</li> <li>○ Mid Ordinate Rule</li> <li>○ Simpsons Rule</li> <li>○ Eulers methods for differentiating.</li> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Kuratowskis Theorem</li> <li>● Isomorphism</li> <li>● Augmented flows</li> <li>● Refine network models</li> <li>● Critical Path Analysis</li> <li>● Kinematics in 2 dimensions</li> <li>● Equilibrium &amp; Resolving</li> <li>● Statics &amp; Dynamics</li> <li>● Moments</li> <li>● Dimensional Analysis 2</li> <li>● Conservation of Momentum</li> <li>● Coefficient of Restitution</li> <li>● Impulse for variable forces</li> <li>● Work Energy &amp; Power 2</li> <li>●</li> </ul>	<ul style="list-style-type: none"> <li>● Simplex Algorithm</li> <li>● Simplex Tableau</li> <li>● Gantt Charts</li> <li>● Resource Levelling</li> <li>● Game Theory</li> <li>● Cayley Tables</li> <li>● Group theory</li> <li>● Lagrange’s Theorem</li> <li>● Circular Motion 2</li> <li>● Centres of Mass &amp; Moments</li> </ul>
<b>Keywords</b>	<b>Keywords</b>	<b>Keywords</b>	<b>Keywords</b>	<b>Keywords</b>
<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>