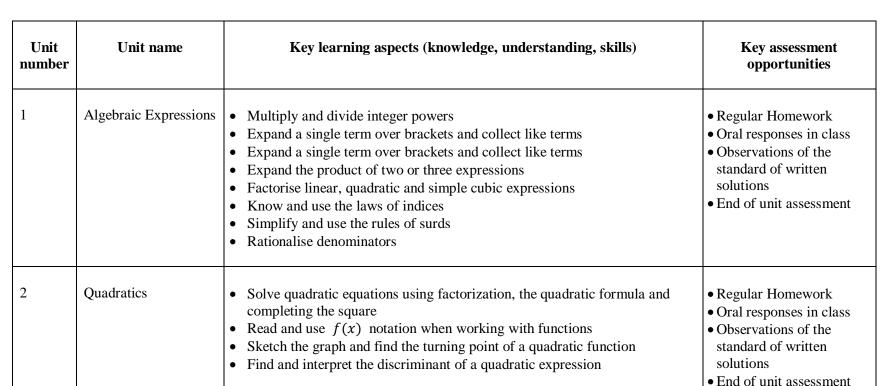
## **Curriculum Overview – Autumn Term 2022-2023**

**Subject**: Mathematics

**Year group**: 12, International A Level – Pure Mathematics 1





Unit number	Unit name	Key learning aspects (knowledge, understanding, skills)	Key assessment opportunities
3	Equations and Inequations	<ul> <li>Solve linear simultaneous equations using elimination or substitution</li> <li>Solve simultaneous equations: one linear and one quadratic</li> <li>Interpret algebraic solutions of equations graphically</li> <li>Solve linear inequalities</li> <li>Solve quadratic inequalities</li> <li>Interpret inequalities graphically</li> <li>Represent linear and quadratic inequations graphically</li> </ul>	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>End of unit assessment</li> </ul>
4	Graphs and Transformations	<ul> <li>After completing this chapter, you should be able to:</li> <li>Sketch cubic graphs</li> <li>Sketch reciprocal graphs of the form y = a/x and y = a/x<sup>2</sup></li> <li>Use intersection points of graphs to solve equations</li> <li>Translate graphs</li> <li>Sketch graphs</li> <li>Transform graphs of unfamiliar functions</li> </ul>	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>End of unit assessment</li> </ul>
5	Straight Line Graphs	<ul> <li>After completing this unit, you should be able to:</li> <li>Calculate the gradient of a line joining a pair of points</li> <li>Understand the link between the equation of a line, and its gradient and y-intercept</li> <li>Find the equation of a line given (i) the gradient and one point on the line or (ii) two points on the line</li> <li>Know and use the rule for parallel and perpendicular gradients</li> <li>Find the point of intersection for a pair of straight lines</li> <li>Solve length and area problems on coordinate grids</li> </ul>	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>End of unit assessment</li> </ul>

Unit number	Unit name	Key learning aspects (knowledge, understanding, skills)	Key assessment opportunities
6	Trigonometric Ratios	After completing this chapter, you should be able to:  Use the cosine rule to find a missing side or angle  Use the sine rule to find a missing side or angle  Find the area of a triangle using an appropriate formula  Solve problems involving triangles  Sketch the graph of the sine, cosine tangent functions  Sketch simple transformations of these graphs	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>End of unit assessment</li> </ul>
7	Radians	After completing this chapter, you should be able to:     Convert between degrees and radians, know exact values of angles measured in radians     Find areas of sectors and segments using radians	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>End of unit assessment</li> </ul>
8	Differentiation	<ul> <li>After completing this chapter, you should be able to:</li> <li>Find the derivative, f'(x) or dy/dx, of a simple function</li> <li>Use the derivative to solve problems involving gradients, tangents and normal</li> <li>Find the second derivative, d<sup>2</sup>y/dx<sup>2</sup>, of a simple function</li> </ul>	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>End of unit assessment</li> </ul>
9	Integration	<ul> <li>After completing this chapter, you should be able to:</li> <li>Find y given dy/dx for x<sup>n</sup></li> <li>Integrate polynomials</li> <li>Find f(x), given f'(x) and a point on the curve</li> </ul>	<ul> <li>Regular Homework</li> <li>Oral responses in class</li> <li>Observations of the standard of written solutions</li> <li>Mock assessment</li> </ul>