

Curriculum Summary – CAD (Year 10)

Autumn	Spring	Summer
<p>Students focus on building core CAD skills using industry-standard software, SolidWorks. This term introduces the basic interface, tools, and commands, helping students understand how to create and edit simple 2D sketches and 3D models. Emphasis is placed on accuracy, good modelling habits, and confidence in navigating the software.</p> <p>Skills learnt consist of:</p> <ul style="list-style-type: none"> • Understanding and working on different planes. • Sketching features. • Dimensioning sketches. • Extruding simple shapes to make 3D. • Creating shapes using the revolve tool. • Using the shell feature. • Creating fillets and chamfers to enhance a shapes overall appearance. <p>They undertake the designing and modelling of mini projects which are combined to help build up a portfolio to show potential interviewees and show off the skills built up on this industrial software package.</p>	<p>Students begin to develop their skills further by exploring more advanced tools and techniques. They learn how to create more complex shapes and structures, including the use of features such as</p> <ul style="list-style-type: none"> • Assemblies, creating a product from a variety of different parts. • Using the lofting tool to create angled products on different planes. • Using the sweep tool to follow paths to create intricate shapes. Using the pattern tool. <p>This term encourages problem-solving and a deeper understanding of how designs function in real-world contexts.</p> <p>They will combine their engineering manufacture skills by interpreting a range of engineering drawings and modelling these in a range of visual renders using the powerful software capabilities.</p>	<p>Students apply everything they have learned to more challenging design projects. These projects require them to plan, model, and refine complete designs, demonstrating both technical skill and creativity. The focus is on combining all previously learned techniques to produce high-quality CAD work that reflects real engineering and design processes.</p> <p>They are provided with a range of engineering drawings that they need to interpret and replicate in SolidWorks.</p> <p>They will finally bring all these skills together to complete their Level 1 City and Guilds Award in Parametric Modelling which is set under exam conditions in our state of the art CAD facility.</p>