

Curriculum Summary – Engineering Manufacture (Year 11)

Autumn	Spring	Summer
<p>R014: Developments in engineering manufacture</p> <p>Students will learn about the different types of manufacturing processes including shaping and forming processes, additive manufacturing. They will also study the reasons for implementing a quality system in engineering, Quality Control and quality assurance, inventory management, lean manufacturing and globalisation.</p> <p>R016: CAD/CAM programming</p> <p>Students will learn about manufacturing processes including using production aids, standard operating procedures (SOPs), computer aided design (CAD) software and setting up CNC equipment for batch production processes.</p>	<p>R016: NEA Assessment- Manufacturing in quantity</p> <p>Students will apply their prior knowledge and skills to manufacture a product that uses simple jigs and templates to support manufacturing in volume. This includes using CAD software (Solidworks) and computer numerical control (CNC) equipment. Students will set up and operate the CNC equipment and monitor the quality of the manufactured products.</p>	<p>R014 Revision of topic areas/exam revision</p> <p>Students will revisit manufacturing processes, describing how each type of process changes the form of materials. They will also recommend the process types that are necessary to create an identified product.</p> <p>Students will identify the equipment and tools used to carry out manufacturing processes, including explaining the safety considerations when using the machines/equipment.</p> <p>Students will learn to understand materials, their relative properties, typical forms of supply, with at least one common application for each material and the processes that can be used with that material.</p> <p>Students will identify each of the drawing conventions or representations stated including dimensioning.</p> <p>Students will learn to describe at least one example of a product produced at each scale of manufacture and at least one example of a product produced using each different level of automation.</p>