Crewe Engineering & Design UTC

Curriculum Summary – Engineering Manufacture (Year 10)

Autumn	Spring	Summer
R014: Reading engineering drawings Students will interpret orthographic third angle projection drawings including: - Standard conventions in BS 8888 and how these are applied Calculation of maximum and minimum acceptable dimensions from a stated tolerance Meaning of line types Representation of mechanical features Three-dimensional components where there are dimension changes, tapers or steps along the form R015: Interpreting engineering drawing in preparation for manufacture Students will carry out risk assessments and demonstrate that they can safely set up and operate: The mill, including grooves, facing and slotting. The lathe, including end facing, parallel turning, centering. The Drill, including knurling and parting off. Students will also select and safely use equipment for marking out. They will learn about Manually controlled machining processes and Joining techniques.	R014: Manufacturing processes Students will learn about the types of manufacturing processes, details of different manufacturing processes, shaping and forming processes and additive manufacturing. The types of engineering materials and how they are processed will also be studied. R015: Workshop practice Students will Produce a 'skills stick' (practical representation of a range of machining and hand skills). They will also learn how to measure/mark out and use tools/equipment and manual machinery safely. R015: Workshop NEA Assessment Students will apply their knowledge and skills of materials properties, machining, interpreting engineering drawings to manufacture a metal product.	R014: Scales of manufacture Students will learn about Quality Control and Quality Assurance, Inventory management, Lean manufacturing and Globalisation, R016: Preparing for scale manufacture Students will learn how to disassemble a range of products to assess the manufacturing process, materials used and end of life considerations.