



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<p><b>Unit 1-</b> Fundamentals of mechanical, electrical/ electronic and fluid power engineering.</p> <p><b>Unit 3-</b> Mechanical engineering</p>	<p><b>Unit 2-</b> application of engineering principles</p> <p><b>Unit 3-</b> Mechanical engineering</p>	<p><b>Unit 1-</b> Exam window 1</p> <p><b>Unit 2-</b> Exam window 1</p> <p><b>Unit 3-</b> Mechanical engineering</p>	<p><b>Unit 2-</b> Application of engineering principles</p> <p><b>Unit 3-</b> Mechanical engineering</p>	<p><b>Unit 1-</b> Exam window 2</p> <p><b>Unit 2-</b> Exam window 3</p>	
Core Skills	<ul style="list-style-type: none"> <li>•Interpreting engineering drawings to produce engineered component(s)</li> <li>•Be able to prepare and mark out materials to produce engineered component(s)</li> <li>•Be able to select and use tools, and work-holding devices to create machined component(s)</li> <li>•Be able to perform machine operations to create machined component(s)</li> </ul>	<ul style="list-style-type: none"> <li>•Interpreting engineering drawings to produce engineered component(s)</li> <li>•Be able to prepare and mark out materials to produce engineered component(s)</li> <li>•Be able to select and use tools, and work-holding devices to create machined component(s)</li> <li>•Be able to perform machine operations to create machined component(s)</li> </ul>	<ul style="list-style-type: none"> <li>•Interpreting engineering drawings to produce engineered component(s)</li> <li>•Be able to prepare and mark out materials to produce engineered component(s)</li> <li>•Be able to select and use tools, and work-holding devices to create machined component(s)</li> <li>•Be able to perform machine operations to create machined component(s)</li> </ul>	<ul style="list-style-type: none"> <li>•Interpreting engineering drawings to produce engineered component(s)</li> <li>•Be able to prepare and mark out materials to produce engineered component(s)</li> <li>•Be able to select and use tools, and work-holding devices to create machined component(s)</li> <li>•Be able to perform machine operations to create machined component(s)</li> </ul>	<ul style="list-style-type: none"> <li>•Revision techniques</li> </ul>	
Core Knowledge	<ul style="list-style-type: none"> <li>•The seven fundamental SI units (International Systems of Units)</li> <li>•The names and quantities represented by SI derived units with special names and symbols</li> <li>•SI prefixes and scientific form including conversions</li> <li>•Definitions related to measurement</li> <li>•Calculation of areas and volumes</li> <li>•Classification of common engineering materials</li> <li>•Properties of engineering materials</li> <li>•Characteristics on a force-extension graph of the following types of material</li> <li>•Identify types of motion and their characteristics</li> <li>•Forces</li> <li>•Basic mechanisms (gears, pulleys, levers, linkages)</li> <li>•Know electrical and electronic principles for electronic control and electrical motion</li> <li>•Know how to recognise fluid power components and their symbols and calculate fluid power</li> <li>•Know the Health and Safety practices and procedures required in an engineering workplace</li> </ul>	<ul style="list-style-type: none"> <li>•Understand the factors that determine efficiency in engineering systems</li> <li>•Understand why engineering materials are suitable for specific engineering applications</li> <li>•Understand how to select electrical and electronic devices for engineering purposes</li> <li>•Understand the operation and application of fluid power sources, actuators and valves</li> </ul>				
Assessment & Feedback	<p>Unit 1- Each topic element is assessed through the use of multiple choice questions, mimicking the final exam format for unit 1. Whole group feedback is provided following each assessment. Knowledge retrieval tasks are used at the start of each lesson with whole group feedback.</p> <p>Unit 2- Each topic element is assessed using exam style questions with individual and whole group feedback provided. Whole group feedback is provided following each final topic assessment. Knowledge retrieval tasks are used at the start of each lesson with whole group feedback provided to learners.</p> <p>Unit 3- Ongoing feedback is provided to learners as they progress through each of the self passed assignments within the unit 3 manufacturing project. This is recorded on google classroom for ease of access and is recorded as both verbal recordings and written comments. Learners are able to respond to this feedback in order to make improvements to their work. Misconceptions are addressed through whole group feedback and live marking techniques are used through out practical tasks to provide learners with instant feedback.</p>					
Link to prior learning	<p>This course is delivered as a foundation course to those students interested in progressing in to L3 engineering, apprenticeships or work. No prior learning in the engineering subject is expected however students who have engaged with technical subjects in KS3 or KS4 may draw upon;</p> <p><b>KS3 links</b></p> <ul style="list-style-type: none"> <li>•Manufacturing processes</li> <li>•Calculating areas, ohm's law, total resistance.</li> <li>•Measurement</li> </ul> <p><b>KS4 links</b></p> <ul style="list-style-type: none"> <li>•Interpreting information from a given engineering drawing.</li> <li>•Health and safety for given manufacturing processes</li> </ul> <p>•Unit 3 practical application interrelates with U1 learning providing learners with practical application of taught concepts.</p>					