

Engineering Timeline: Year 9 to 11

	Quality of practical outcome Evaluation of independent progress. Self-assessment Peer assessment	Quality of practical outcome assessed Evaluation of independent progress Self-assessment. Peer assessment.	Quality of practical outcome Evaluation of independent progress Self-assessment. Peer assessment.	Quality of practical outcome Evaluation of independent progress Self-assessment Peer assessment	Quality of practical outcome Evaluation of independent progress Self-assessment Peer assessment	Quality of practical outcome Evaluation of independent progress Self-assessment Peer assessment
Year 10	<p><u>R015: Manufacturing a one-off product</u></p> <p>Students produce a Basic Production Plan for the products that they have already made in preparation for beginning Unit R115</p>	<p><u>R015: Manufacturing a one-off product</u></p> <p>ASSIGNMENT How to safely plan and produce a one-off product by using appropriate processes, tools and equipment</p>	<p><u>R016: Manufacturing in quantity</u></p> <p>Use of CAD package. Students learn how to use Alpha Cam to produce drawing both as working drawings and for use on CNC machinery CNC- Students learn how to use set up use the CNC lathe and CNC milling machine to include worth and tool offsets</p>	<p><u>R016: Manufacturing in quantity</u></p> <p>ASSIGNMENT How to manufacture using simple jigs and templates to support manufacturing in volume using Computer Aided Design (CAD) software and Computer Numerical Control (CNC) equipment. Topics include:</p> <ul style="list-style-type: none"> • Preparing for manufacture • Develop programmes to operate CNC equipment • Safely use processes and equipment to make products in quantity <p>Students complete the written elements of the Assignment</p>	<p><u>Revision – R014: Principles of engineering Manufacture</u></p> <ul style="list-style-type: none"> • Manufacturing processes • Engineering materials • Manufacturing requirements • Developments in engineering manufacture <p>Students prepare and revise for PPEs using past papers and revision materials provided</p>	<p><u>PPE Exam – R014: Engineering materials, processes, and production</u></p> <p>The results of the PPE are analysed and the answers to the questions worked through. Students to continue with making projects of their own choice</p>
	End Point	End Point	End Point	End Point	End Point	End Point
	Students produce a number of production plans of suitable standard	Written aspect of assignment complete in all respects. product complete within tolerances	Students produce a number of CAD drawings of suitable standard	Written aspect of assignment complete in all respects. The product machined on CNC equipment completed within tolerances	PPE completed to required standard	Students to make progress with own projects

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	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
	The production plans produced are assessed to ensure they are of the required standard	Unit R110 assessment sheets and witness statements completed for each students	The CAD drawings produced are assessed to ensure they are of the required standard	Unit R111 assessment sheets and witness statements completed for each students	PPE marked according to the mark scheme and the results fed back.	The papers are worked through to improve performance

Year 11	<p><u>Revision – R014:</u> <u>Principles of engineering</u> <u>Manufacture</u></p> <p>Students prepare and revise for the public exam proper using past papers and revision materials provided SIT EXAM UNIT R014 –</p>	<p><u>All Units</u></p> <p>Prepare and revise for re-sit of unit R014 as necessary Review and improve units R015, R016</p>	<p><u>Prepare units R015, R016 for submission</u></p> <p>Email sample to the board for assessment</p>			
	End Point	End Point	End Point			
	Students to sit the unit R014 exam	R015, R016 units ready for marking				
	Assessment	Assessment	Assessment			
	The results of the unit R014 exam marked by exam board.	R015, R016 Units all marked				