Curriculum Overview - Engineering

Magna Academy Poole
an Aspirations Academy

Year Group	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Year 10 **BTEC Tech Engineering**	1.1 Understanding engineering drawings 1.2 Planning manufacturing 1.3 Using engineering tools and equipment 1.4 Implementing engineering processes	1.2.1 identifying materials 1.2.2 equipment selection 1.2.3 tool selection 1.2.4 planning and sequencing 1.2.5 contingency planning	1.3.1 using engineering tools 1.3.2 using engineering equipment 1.3.3 health and safety.	1.4.1 apply a range of engineering processes 1.4.2 work with a range of materials 1.4.3 evaluate the quality of engineered products 1.4.4 evaluate own practices and processes.	2.1.1 primary features of the given engineered product 2.1.2 identifying features of other engineered products 2.1.3 function of the proposed solution.	2.2.1 generating a range of engineered solutions 2.2.2 developing ideas through to a conclusion 2.2.3 communicating design ideas.
Skill(s)	Use of drawing equipment Use of CAD Use of hand tools	Use of machinery such as pillar drill and lathe Planning and organisational skills	Accurate and safe use of hand tools and machinery Working safely skills Team Working skills	Evaluative skills Critical analysis SWOT	Critical thinking Design idea generation Problem solving	Presentation skills Communication skills Idea generation
PD/T&E	Wider impacts on the real world					

	Links to real world professions Understanding the world of workplace safety					
Futures	Engineering related careers Health and Safety related careers					
Year 11 **BTEC Tech Engineering**	2.3.1 producing a manufacturing specification 2.3.2 drawing an engineering design solution that adheres to recognised standards. 2.4.1 using mathematical techniques for solving applied engineering problems	2.4.2 justifying suitable materials for use in the final engineered solution 2.4.3 justifying suitable processes for manufacturing the final engineered solution. 3.1.1 describing engineering developments 3.1.2 explaining the effects of engineering achievements	3.1.3 explaining how environmental issues affect engineering applications. 3.2.1 understanding materials, their properties, and their selections for specific purposes 3.2.2 describing properties required of materials for engineering products 3.2.3 explaining how materials are tested for properties.	3.3.1 describing engineering processes 3.3.2 describing applications of engineering processes 3.3.3 safe working practices. 3.4.1 using mathematical techniques for solving engineering problems 3.4.2 understanding and producing engineering drawings.	Revision and Examination Preparation	

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Skill(s)	Technical Drawing Skills Problem solving with Mathematics	Reasoning Skills Understanding how the work of others influences modern engineering	Material testing methods	Technical drawing skills Interpretations skills Problem solving skills	Revision and examination techniques	
PD/T&E	Wider impacts on the real world Environmental impacts of engineering Links to real world professions Understanding the world of workplace safety					
Futures	Engineering related careers Health and Safety related careers					