Subject Name Design Engineering					
	Year 12		Year 13		
Α	Iterative Design Project	Theory content delivery	Iterative Design Project	Theory content delivery	
u	Investigations of the context and	Identifying requirements	Investigations of the context and	Further investigation of the follow;	
t	feasibility study of potential products	 exploring contexts that design 	feasibility study of potential products	Identifying requirements	
u	Developing a brief	solutions are intended for	Developing a brief	 exploring contexts that design 	
m	Investigations of user and stakeholder	stakeholder analysis	Investigations of user and stakeholder	solutions are intended for	
n	needs and wants and the outlining of	usability	needs and wants and the outlining of	 stakeholder analysis 	
1	stakeholder requirements (nontechnical	Learning from existing products and	stakeholder requirements (nontechnical	usability	
Α	specification)	practice	specification)	Learning from existing products and	
u	Investigations of existing products and	 analyse and evaluate products 	Investigations of existing products and	practice	
t	design practices	 past and present developments 	design practices	analyse and evaluate products	
u	Exploration of materials and possible	in design	Exploration of materials and possible	 past and present developments 	
m	•	 lifecycles of products 	technical requirements	in design	
n	Technical specification	Implications of wider issues	Technical specification	 lifecycles of products 	
2	Generation of initial ideas	 moral and commercial factors 	Generation of initial ideas	Implications of wider issues	
S	Design developments	 developing design solutions for 	Design developments	moral and commercial factors	
p	Development of final design solution	manufacture	Development of final design solution	developing design solutions for	
l r	Critical thinking	distributing products to markets	Critical thinking	manufacture	
li		energy factors		distributing products to markets	
l n		Design thinking and communication		energy factors	
g		annotated 2D and 3D sketching		Design thinking and communication	
1		and digital tools to graphically		annotated 2D and 3D sketching disital to all to specifically.	
_		communicate ideas		and digital tools to graphically	
S	Planning for making the final	different approaches to design thinking	Planning for making the final	communicate ideas	
р	prototype	thinking	prototype	different approaches to design thinking	
r	Final prototype	Material and component considerations • factors influence the selection	Final prototype	thinking Material and component considerations	
'	Use of specialist techniques and	of materials	Use of specialist techniques and	factors influence the selection	
n	processes Ongoing evaluation to manage design	materials for prototypes	processes Ongoing evaluation to manage design	of materials	
g 2	progression	properties/characteristics		materials materials for prototypes	
-	Risk Assessments	Technical Understanding	progression Risk Assessments	properties/characteristics	
S	Feasibility of the design solution	structural integrity	Feasibility of the design solution	Technical Understanding	
u	Evaluation of the final prototype	reinforcement	Evaluation of the final prototype	structural integrity	
m	Liverage of the final prototype	mechanisms provide	Liverage of the final prototype	reinforcement	
m		functionality		mechanisms provide	
е				functionality	
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r	 change the magnitude and 	 change the magnitude and
1	direction of forces and torques	direction of forces and torques
	structural and mechanical	 structural and mechanical
	efficiency	efficiency
	electronic systems	electronic systems
	Manufacturing processes and	Manufacturing processes and
	techniques	techniques
	 materials and processes be 	 materials and processes be
	used to make iterative models	used to make iterative models
	How can materials and	 How can materials and
	processes be used to make	processes be used to make
S	commercial products	commercial products
l u	How is manufacturing organised	 How is manufacturing organised
m	How is the quality of products	 How is the quality of products
m	controlled	controlled
e	Viability of design solutions	Viability of design solutions
r	 assess whether a design 	 assess whether a design
2	solution meets its stakeholder	solution meets its stakeholder
	requirements	requirements
	 assess whether a design 	 assess whether a design
	solution meets the criteria of	solution meets the criteria of
	technical specifications	technical specifications
	Health and safety	Health and safety
	How can safety be ensured	 How can safety be ensured
	when working with materials in	when working with materials in
	a workshop environment	a workshop environment