CURRICULUM PLANNING SEQUENCE

Subject	Year	Term	Big Ideas	Topics	Subject Learning Checklist
GCSE ENGINEERING	Year 10	Term 1 - 21hrs Theory : 14hrs Practical	Materials and their properties, Material costs and supply & Systems	3.1.1 Materials and their properties	3.1.1.1 Metals and alloys
					3.1.1.2 Polymers
					3.1.1.3 Composites
					3.1.1.4 Other materials
				3.6 Softjaws Project	Measuring & marking metals
					Jigs
					3.2.2 Material removal
					3.2.3 Shaping
					3.2.5 Joining & assembly
				3.6 Practical engineering skills	Production planning
					Testing & quality control
				3.1.2 Material costs and supply	Cost, availability, form and supply
					Calculation of costs
					Machining materials
				3.3 Systems	3.3.2 Electrical systems
				3.6 Chrismas Tree Practical Project	3.3.3 Electronic systems
		Term 2 - 18hrs Theory : 12hrs Practical	Systems, Factors that influence design & Impact of modern technologies	3.3 Systems	3.3.1 Mechanical systems
					3.3.4 Structural systems
					3.3.5 Pneumatic systems
				3.1.3 Factors influencing design of solutions	Energy production methods:
					Engineered lifespans.
					maintenance
					user requirements
				3.6 Screwdriver Project	3.2.6 Heat treatment
					3.2.7 Surface finishing
				3.6 Candle stick Project	3.2.3 Shaping
					3.2.4 Casting and moulding
					3.2.6 Heat and chemical treatment
				3.5 The impact of modern technologies	Impact if industry
					New and emerging technolgies
		Term 3 - 9hrs Theory: 6hrs Practical	Testing and invesigation & Modelling and calculating	3.4 Testing and investigation	3.4.1 Modelling and calculating
					3.4.2 Testing
					3.4.3 Aerodynamics
				3.6 Casting Project	3.2.1 Additive manufacture
					3.2.4 Casting and moulding
					3.2.7 Surface finishing
		Term 3	GCSE Coursework	Brief analysis	
				Mind map	
				Client identified	
				Product analysis	
				Mechanical research	
				Electronic research	
				Specification	
				Testing and Tolerances	
				Initial ideas	
				Evaluations	
				Developed ideas	
				Modelling	
				Systems diagrams	
				Final designs	
				Circuit diagrams	
				CAD work	
				Production planning	
				Flow & Gantt charts	