D&T PRODUCT DESIGN YEAR PLANNER (LTP) – YEAR 12

Term	Assessment Schedule*		Home Learning Support (How students can extend learning in addition to homework)
	THEORY	**PRACTICAL/CAD SKILLS/ASSESSMENT**	
Autumn 1	3.1.1.4 Design and Communication 3.1.1, 3.1.2 Classifications and types of Softwoods Hardwoods Manufactured boards Injection moulding test from summer work. June 14 Q8. 3.1.1, 3.1.2 Classifications of polymers and types of thermoplastics 3.1.1.4 Design and Communication 3.1.2 Performance characteristics of woods - types of - applications of - stock forms Maths – surface area of 2D shapes 3.1.2 Performance characteristics of polymers Blow moulding test from summer work 3.2.10 National and International Standards in product design 3.1.4 Wood processes - joining - addition/fabrication - forming 3.1.2 Performance characteristics of polymer-based sheet and film - types of - applications of 3.1.3 Polymer enhancement 3.2.2 Design influences 3.2.2 Design styles and movements 3.2.2 Designers and their work 3.1.5 Wood finishing 3.1.3 Wood enhancement 3.1.2 Polymer stock forms 3.1.4 Polymer processes -Injection moulding 3.2.2 Design styles and movements 3.2.2 Designers and their work 3.1.1, 3.1.2 Classifications and types of metals -Ferrous -Non-ferrous -Alloys -applications of	Demo use of bandsaw Risk assessments Jointing for tool box Gluing up 2D Design CAD Etching using laser cutter Router <u>Assessments</u> Blow moulding Injection moulding Vacuum forming	Read around the topics covered in class and add to the notes made. Purchase the recommended text book and use this to extend your knowledge from the classroom. Practise past papers at home and self-assess using the mark schemes available. Watch videos on You tube showing manufacturing processes. Use Pintrest to look for creative ideas and how others are using a variety of materials to make innovative products.

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	3.2.3.4 Product life cycle 3.2.2 Designers and their work 3.1.2 Performance characteristics of metals -stock forms 3.2.8 Responsible design -Environmental issues 3.1.11 Design for manufacturing, maintenance, repair and disposal 3.1.4 Metal processes -forming -permanent and temporary joining methods 3.1.4 Polymer processes -Blow moulding		
Autumn 2	3.2.8 Responsible design -Conservation of energy and resources 3.1.4 Addition/fabrication processes -wasting processes 3.1.4 Polymer processes -Rotational moulding 3.1.2 Smart materials 3.1.2 Composites 3.1.4.5 Metal finishing 3.1.4 Polymer processes -Line bending 3.3.3 Major developments in technology 3.1.3 Metal enhancement 3.1.4 Polymer processes -Extrusion 3.1.8 8 Inclusive design 3.1.1 Methods for investigating and testing materials Maths – percentage increase/decrease Maths – Pythagoras 3.1.9 Health & Safety – Safe working practices 3.1.9 Safety in products and services to the customer 3.2.5 Use of third party testing and evaluation 3.2.9 Planning for accuracy and efficiency 3.2.9 Quality assurance 3.2.9 Quality control 3.1.2 Thermosets 3.1.4 Polymer processes - Compression moulding	Mitre saw Marking and cutting steel Brazing Milling Joining woods Dip coating of steel Marker rendering – glue gun CAD – Space Claim <u>Assessments</u> Rotational moulding Extrusion PPE 1.5hrs Paper 2	
Spring 1	3.1.2 Biodegradable polymers 3.1.6.2 The use of computer systems Specific manufacturing systems to include: •modular/cell production •just in time (JIT) •quick response manufacturing (QRM) •flexible manufacturing systems. Maths – volume, circumference, PPE Maths questions. 3.1.4.5 The use of adhesives 3.2.5 Critical analysis and evaluation 3.2.5 Testing and evaluating products in commercial production 3.3.3 Social, moral and ethical issues 3.1.6 Scales of production 3.1.2 Elastomers 3.1.4 Polymer processes - Laminating (layup) 3.1.2 Modern materials 3.2.4 Design processes 3.1.4 Polymer processes -Vacuum forming Thermoforming	Revision tasks Continuous assessment via exam questions in class and verbal questioning. <u>Assessments</u> Sine and cosine test Elastomers	

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Spring 2	3.3.3 Socio economic influences 3.1.6.2 Efficient use of materials 3.2.1 Design methods and processes 3.1.8 Product development and improvement -Ergonomics & Anthropometrics 3.1.2 Performance characteristics of papers and boards - types of - applications of 3.2.7 Accuracy in design and manufacture 3.1.5 Paper and board printing processes 3.2.6 Selecting appropriate tools, equipment and processes 3.1.5 Paper and board finishing 3.1.4 Paper and board forming processes	Revision tasks Continuous assessment via exam questions in class and verbal questioning.	
Summer 1	3.1.7 Digital design and manufacture - CAD & CAM 3.1.13 Enterprise and marketing in the development of products <u>Start NEA</u> Research Concept ideas	Revision tasks Continuous assessment via exam questions in class and verbal questioning. PPE 2.5 hrs Paper 1	