

**Subject: Design and Technology**

Date	Exams/ Assess	Unit(s)
2/9/24		<u>Materials and their applications</u> <ul style="list-style-type: none"> <li>• Classification of materials</li> <li>• Methods for investigating and testing materials</li> </ul>
9/9/24		<u>Woods</u> <ul style="list-style-type: none"> <li>• Performance characteristics of woods</li> <li>• Wood enhancement</li> <li>• Wood processes</li> <li>• Wood finishing</li> </ul>
16/9/24		<u>The requirements for product design and development</u> <ul style="list-style-type: none"> <li>• Product development and improvement</li> <li>• Inclusive design</li> </ul>
23/9/24		<u>Forming, redistribution and addition processes</u> <ul style="list-style-type: none"> <li>• The use of adhesives and fixings</li> <li>• Jigs and fixtures</li> </ul>
30/09/24		<u>Focused Practical Skills Activity</u> <ul style="list-style-type: none"> <li>• Metal Turning</li> <li>• Internal / External Threads</li> <li>• Timber laminating, Steam Bending</li> <li>• Joining of materials</li> </ul>
7/10/24		<u>Computer Aided Design / Manufacture</u> <ul style="list-style-type: none"> <li>• Sketch Up</li> <li>• 2D Design</li> <li>• Laser Cutter</li> </ul>
14/10/24		<u>Mock NEA</u> <ul style="list-style-type: none"> <li>• Investigation of design contexts / Exploration of possible options</li> </ul>
21/10/24		
4/11/24		<u>Metals</u> <ul style="list-style-type: none"> <li>• Performance characteristics of metals</li> <li>• Metal enhancement</li> <li>• Metal processes</li> <li>• Metal finishing</li> </ul>
11/11/24		

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18/11/24		<p><u>Digital design and manufacture</u></p> <ul style="list-style-type: none"> <li>• Computer aided design (CAD)</li> <li>• Computer aided manufacture (CAM)</li> <li>• Virtual modelling</li> <li>• Rapid prototyping processes</li> <li>• Electronic data interchange</li> <li>• Production, planning and control (PPC) networking</li> </ul> <p><u>Focused Practical Skills Activity</u></p> <ul style="list-style-type: none"> <li>• Joining of materials</li> <li>• Timbers - Temporary and permanent fixing methods</li> <li>• Metals – Temporary and permanent, Rivets, Welding, Brazing</li> <li>• Metal forming and shaping – Bending, Forging, Casting.</li> <li>• Use of the milling machine</li> </ul> <p><u>Mock NEA</u></p> <ul style="list-style-type: none"> <li>• Investigation of design contexts / Exploration of possible options.</li> </ul>	
25/11/24			
2/12/24			
9/12/24			
16/12/24			
6/1/25			
13/1/25		<p><u>Polymers</u></p> <ul style="list-style-type: none"> <li>• Performance characteristics of polymers</li> <li>• Performance characteristics of polymer based sheet and film</li> <li>• Elastomers</li> <li>• Biodegradable polymers</li> <li>• Polymer enhancement</li> <li>• Polymer processes</li> <li>• Polymer finishing</li> </ul> <p><u>Health and safety</u></p> <ul style="list-style-type: none"> <li>• Safe working practices</li> <li>• Safety in products and services to the customer</li> <li>• Protecting designs and intellectual property</li> </ul> <p><u>Focused Practical Skills Activity</u></p> <ul style="list-style-type: none"> <li>• Timber – Milling and Routing</li> <li>• Timbers - Temporary and permanent fixing methods</li> <li>• Finishing Processes – Timber and Metal</li> </ul> <p><u>Mock NEA</u></p> <ul style="list-style-type: none"> <li>• Development of a design proposals.</li> </ul>	
20/1/25			
27/1/25			
3/2/25			
10/2/25			
24/2/25			
			<p><u>Papers and boards</u></p> <ul style="list-style-type: none"> <li>• Performance characteristics of papers and boards</li> </ul>

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3/3/25		<ul style="list-style-type: none"> <li>• Paper and board forming processes</li> <li>• Paper and board finishing</li> <li>• Paper and board printing processes</li> </ul>
10/3/25		<p><u>Performance characteristics of materials</u></p> <ul style="list-style-type: none"> <li>• Composites</li> <li>• Smart materials</li> <li>• Modern materials</li> </ul>
17/3/25		<p><u>Modern industrial and commercial practice</u></p> <ul style="list-style-type: none"> <li>• Scales of production</li> <li>• Efficient use of materials</li> <li>• The use of computer systems</li> <li>• Sub-assembly</li> </ul>
24/3/25		
31/3/25		<p><u>Mock NEA</u></p> <ul style="list-style-type: none"> <li>• Development of a design proposals.</li> </ul>
21/4/25		<p><u>Design for manufacturing, maintenance, repair and disposal</u></p> <ul style="list-style-type: none"> <li>• Manufacture, repair, maintenance and disposal</li> <li>• Ease of manufacture</li> <li>• Disassembly</li> <li>• Feasibility studies</li> <li>• Enterprise and marketing in the development of products</li> <li>• Design communication</li> </ul>
28/4/25		
5/5/25		<p><b>Start of NEA portfolio</b></p> <p><b>AO1 Section A – Identifying and investigating design possibilities (20 marks)</b></p> <ul style="list-style-type: none"> <li>• Rationale for chosen context clearly identified. Investigation including: disassembly, practical experimentation, visits, surveys and interviews, focus groups, primary and secondary research. Investigation material thoroughly analysed and initial concepts generated.</li> </ul>
12/5/25		
19/5/25		<p><b>AO1 Section B – Producing a design brief and specification (10 marks)</b></p> <ul style="list-style-type: none"> <li>• Produce a clear and challenging design brief and fully detailed design specification reflecting thorough consideration of investigations undertaken.</li> </ul>
2/6/25		<p><b>Theory- Designing and making principles</b></p> <p><u>Design methods and processes</u></p> <ul style="list-style-type: none"> <li>• Iterative design process</li> </ul>

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9/6/25		<p><u>Responsible design</u></p> <ul style="list-style-type: none"> <li>• Environmental issues</li> <li>• Conservation of energy and resources</li> </ul>
16/6/25		<p><u>Design theory</u></p> <ul style="list-style-type: none"> <li>• Design influences</li> <li>• Design styles and movements</li> <li>• Designers and their work</li> </ul>
23/6/25		<p><b>NEA</b></p> <p><b>AO2 Section C – Development of design proposal(s) (25 marks)</b></p>
30/6/25		<ul style="list-style-type: none"> <li>• Generate design proposals that take full account of the design brief and specification.</li> <li>• Design proposals should reflect on first concepts and may use a variety of media in the development of a prototype that can be manufactured by the student. Constant reference to the design brief and design specification should be evident. Modelling is a key element of this assessment criterion.</li> </ul>
7/7/25		<p>Produce a comprehensive and fully detailed manufacturing specification.</p>
14/7/25		