

## Sixth Form Subject Information

# Product Design



<b>Qualification</b>	A level	
<b>Exam Board</b>	AQA	
<b>Course Leader</b>	Mr B Cassie	
<b>Course summary</b>	<p>Students will investigate historical, social, cultural, environmental and economic influences on design and technology, whilst enjoying opportunities to put their learning in to practice by producing products of their choice.</p> <p>There will be an emphasis on the life cycle of products, manufacture and final disposal. This specification also considers the broader issues for the designer and how historical and technological developments, along with the work of contemporary designers, is affected by key design principles.</p>	
<b>What will students learn?</b>	<b>Examinations</b>	<p><b>Paper 1 -25% of A level</b></p> <ul style="list-style-type: none"> <li>• Product development and improvement</li> <li>• Inclusive design</li> <li>• Ergonomics and anthropometrics</li> <li>• Design illustration and communication</li> <li>• Computer Aided Design (CAD)</li> <li>• Computer Aided Manufacturing Processes (CAM).</li> <li>• Efficient use of materials</li> <li>• Safe working practice</li> <li>• Design movement &amp; historical influences</li> <li>• Socio-economic influences</li> <li>• Major developments in technology</li> <li>• Product life cycle</li> <li>• Social, moral and ethical issues</li> <li>• Environmental issues</li> <li>• Working properties of Materials: Wood Metal Polymer Paper and Card Modern/Smart</li> </ul> <p><b>Paper 2 – 25% of A level</b></p> <ul style="list-style-type: none"> <li>• Classifying materials and identifying, testing and comparing their application to product manufacture</li> <li>• Product development and improvement</li> <li>• Virtual Modelling</li> <li>• Rapid Prototyping</li> <li>• Safety in Products</li> <li>• Feasibility Studies</li> <li>• 6 R's</li> <li>• Modern Product Design – manufacturing, repair, maintenance &amp; disassembly</li> <li>• Protection of Design – Intellectual property</li> </ul>

	<ul style="list-style-type: none"> <li>• Enterprise and Marketing</li> <li>• Quality Assurance</li> <li>• Quality Control</li> <li>• International Standards</li> <li>• Scale of Production</li> </ul>	
	<b>NEA</b>	<p><b>Non-Exam Assessment - 50% of A level</b>  Students will be required to undertake a small-scale design and make task and produce a final prototype based on a design brief produced by the student. The context of the task will be determined through discussion with course tutor to ensure the full range of assessment criteria is accessible. The contexts will change every year and will be released on 1 June in the year prior to the assessment being submitted. Students are encouraged to build upon their own experience and share their skills when working in workshops to realise final products, concept models or test rigs.</p>
<b>How will students be assessed?</b>	<p><b>A level Assessment</b>  <b>Paper 1 - Two hour written examination -25% of total</b>  Core technical principles and core designing and making principles  Mixture of short answer, multiple choice and extended response</p> <p><b>Paper 2 – Two hour written examination -25% of total</b>  Section A: • Product Analysis. • Up to 6 short answer questions based on visual stimulus of product(s).</p> <p>Section B: • Commercial manufacture. • Mixture of short and extended response questions.</p> <p><b>NEA – Non-Exam Assessment -50% of total</b>  <b>Practical application of technical principles, designing and making principles and specialist knowledge</b></p> <ul style="list-style-type: none"> <li>• Substantial design and make task</li> <li>• 45 hours</li> </ul> <p>The Non-Exam Assessment (coursework) is taught with reference to the set context. Students will be asked to develop a specific brief that meets the needs of a user, client or market. The task must be of an appropriate level of complexity and contain a degree of uncertainty of the outcome so that students can engage in an iterative process of designing, making, testing and evaluating. Students must produce a final prototype based on the design brief they have developed, along with a written or digital design folder or portfolio</p>	
<b>Differentiation</b>	<p>Students are guided on an individual basis towards their focus for the coursework element and tasks are set to enable them to meet the assessment criteria. In preparation for the exam all students are encouraged to read set texts each week and these are discussed in formal theory based lessons which are supported with a range of resources which cater for differing learning styles – whether it be key words, diagrams, videos or hands on exploration of products.</p>	
<b>Resources</b>	<p>AQA – Design &amp;Technology: Product Design 3d Design course text book.  sketchup.google.com (free downloadable 3D CAD)  Techsoft 2D Design, <a href="http://www.design-technology.org">www.design-technology.org</a>, <a href="http://www.technologystudent.com">www.technologystudent.com</a>,  <a href="https://manufacturing.stanford.edu/">https://manufacturing.stanford.edu/</a></p>	