



# DESIGN & TECHNOLOGY: Product Design

**Entry Requirement:** This is suitable for students who have studied Design and Technology at GCSE with a Grade 6 or higher.

**Examination Board:** OCR

## Course Content and Assessment

Content Overview	Assessment Overview	
<p>Technical principles Learners will be required to:</p> <ul style="list-style-type: none"> <li>• analyse existing products</li> <li>• demonstrate applied mathematical skills</li> <li>• demonstrate their technical knowledge of materials, product functionality, manufacturing processes and techniques</li> <li>• demonstrate their understanding of wider social, moral and environmental issues that impact on the design and manufacturing industries</li> </ul>	<p>Principles of...</p> <p>75 marks</p> <p>1 hour 30 minutes written paper</p>	<p><b>25% of total A level</b></p>
<p>This component has two sections that respond to selected tasks.</p> <ul style="list-style-type: none"> <li>• Section A focuses on learners applying their knowledge, understanding and skills of designing and manufacturing prototypes and products.</li> <li>• Section B requires learners to reflect on their design task in Section A in relation to wider factors/issues from the design principles.</li> </ul>	<p>Unseen Challenge</p> <p>75 marks</p> <p>2 hours 30 minutes design/written paper</p>	<p><b>25% of total A level</b></p>
<p>The 'Iterative Design Project' requires learners to undertake a substantial design, make and evaluate project centred on the iterative processes of explore, create and evaluate. Learners identify a design opportunity or problem from a context of their own choice, and create a portfolio of evidence in real time through the project to demonstrate their competence</p>	<p>Iterative Design Project 150 marks Approx. 45 hours Non exam assessment</p> <div style="text-align: center;"> <p><b>Fig. 1 Iterative Design Wheel</b> © Designing Our Tomorrow, University of Cambridge</p> </div>	<p><b>50% of total A level</b></p>

**Inspiring a future in design and technology – Drawing on authentic design practice and contemporary technologies students will be free to explore design possibilities that**

**excite and engage them, giving a strong foundation for further study and developing thinking and design skills that will support them in any future direction.**

Product Design is focused towards consumer products and applications; their analysis in respect of materials, components, and marketability to understand their selection and uses in industrial and commercial practices of product development.

The Iterative Design Project may focus on Product Design or Design Engineering with focus towards engineered and electronic products and systems; the analysis of these in respect of function, operation, components and materials, in order to understand their application and uses in engineered products/systems that have commercial viability.

### **Teaching and Learning Methods**

A range of Teaching and Learning methods are adopted. Students are guided through a range of practical activities to develop the skills and techniques required to create their own designs. Independent working is encouraged whilst guidance is offered throughout the course.

There is a significant amount of technical understanding and practical workshop skills. This includes CAD/CAM Solidworks, 3D printers and laser cutter. We will be purchasing a CNC Centre Lathe later this year.

There is some practical investigative work where some materials will be provided by the school. Theory lessons may involve practical elements as well as written studies.

### **Homework**

Homework is a requirement of all aspects of study but particularly with written elements of the Iterative Design project.

Good organisational skill and a willingness to use time outside of lessons is required.

### **Complementary Subjects**

Product Design links very well with the Science subjects and also with Mathematics courses. It has links with many areas of the curriculum providing a practical problem solving aspect to their studies and opportunities to show flair and imagination in designing.

There are cross curricular links to sustainability issues.

### **Trips and Visits**

Industrial visits as and when available. Visit to the Design Museum in London.

### **Key Features**

Design and manufacture of products using a range of materials supported by theoretical aspects. This course would provide degree preparation and entry, and career opportunities in Product Design, Engineering, Architecture, Graphic Design, Interior Design, Surveying, Illustrating and many more.