Product Design A Level - Edexcel 9DT0

For further advice see Mr Mant

Why choose this course?

The Edexcel GCE in Design and Technology: Product Design specification seeks to develop students' knowledge, understanding, skills and application for designing products. Product design encompasses a wide range of design disciplines but is firmly rooted in the skills required to design and make high quality outcomes. Products that are fit for purpose, satisfy wants and needs, enhance our day-to-day lives and, most importantly, give students the opportunity to demonstrate their design and technology capability.

What will this course involve?

This course demands that students demonstrate a high ability in key designing and making skills. Within Year 12 students will explore a range of topics and manufacture a range of products to a defined tolerance whilst learning tools, processes and self-assessing quality. The students will learn about complex three dimensional software, which can be used to fully visualise ideas, both on screen, as well as through computer aided manufacture, giving them a much clearer understanding of how products are made, and with what. Familiar products will be disassembled and analysed for methods of manufacture and alternatives considered. It is increasingly important that students develop an awareness of wider issues in design and technology, that design and technological activities can have a profound impact on the environment and on society and that these, together with sustainability, are key features of design and manufacturing practice. Mathematical and scientific principles are an important part of designing and developing products and students will be expected to apply these principles when considering the designs of others.

In Year 13 students run their own professional design and make projects by sourcing a client with whom they must work closely with to develop a marketable outcome. Further theory content will be covered in order to assure students depth of knowledge in preparation for their final exam.

Course Structure and Assessment

Component 1: Principles of Design and Technology

A written 2 ½ hour paper, focussed on a wide range of topics. 50% The paper includes calculations, short-open and open-response questions. as well as extended-writing questions focused on:

o Analysis and evaluation of design decisions and outcomes, against a technical principle, for prototypes made by others
o Analysis and evaluation of wider issues in design technology, including social, moral ethical and environmental impacts.

Component 2: Independent Design and Make Project

A student led design and make project with close links to a client and a very high quality outcome required. 50%

• Students will produce a substantial design, make and evaluate project which consists of a portfolio and a prototype
• The portfolio will contain approximately 40 sides of A3 paper (or electronic equivalent)
• There are four parts to the assessment**:**
o **Part 1: Identifying Opportunities for Design**
Identification of a design problem, investigation of needs and research and specification
o **Part 2: Designing a Prototype**
Design ideas, development of design idea, final design solution, review of development and final design and communication of design ideas
o **Part 3: Making a Prototype**
Design, manufacture and realisation of a final prototype, including tools and equipment and quality and accuracy
o **Part 4: Evaluating own Design and Prototype**
Testing and evaluation.