Design Technology: Design Engineering, Product Design

COURSE CODE
A Level   OCR H404, H406

ENTRY REQUIREMENTS
- 6 in GCSE Product Design, Engineering or Control Technology.
- As the new courses have a greater requirement for Maths and Science, we would recommend students gain at least a 6 in these subjects.
- Students can opt for either the Design Engineering or Product Design - it is not possible for them to take both as it is the same overall qualification.

WHAT WILL YOU LEARN?
During the two year course, students will study a range of materials. They will develop a technical understanding of how products function and how they are made to appropriately support the design and manufacture of their own design solutions. Students will learn about wider design principles and the effect of design on users and the world we live in.

Learners will identify market needs and opportunities for new products, initiate and develop design solutions, and make and test prototypes/products. They will develop their subject knowledge, including how a product can be developed through the stages of prototyping, realisation and commercial manufacture. Students will develop a critical mind through enquiry and problem solving, exploration, creation and evaluation of iterative designs. We encourage freedom in approaches towards designing and making so as not to limit the possibilities of project work or the materials and processes being used.

The OCR content requires students to apply mathematical and scientific knowledge, understanding and skills. This content reflects the importance of Design and Technology as a pivotal STEAM subject.

The Design Engineering content of this title is focused 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. The Product Design content of this title 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.

ASSESSMENT
A Level
- A non-examined 'Iterative Design Project' is a substantial design, make and evaluate project centred on the iterative processes of explore, create and evaluate. It is worth 50% of the A Level qualification. Students will be required to identify a design opportunity or problem from a context of their own choice, and create a chronological portfolio supported by real–time evidence of their project development. Innovative approaches will be required resulting in a final prototype that can be tested against the user and the market.
- The 'Principles' examination paper is worth 26.7% (80 marks) of the A Level qualification and assesses analysis of existing products, technical knowledge and understanding of materials, product functionality, manufacturing processes and techniques and allows students to demonstrate their understanding of design thinking and wider social, moral and environmental issues that impact on the design and manufacturing industries. The paper is 1 hour 30 minutes long.
- The 'Problem Solving' paper is worth 23.3% (70 marks) of the A Level qualification and requires learners to apply their knowledge and understanding through higher level thinking skills, reflecting on the viability of products and possible design solutions in context and being able to

make critical judgements on the most appropriate methods and outcomes. The paper is 1 hour 45 minutes long.

NEXT STEPS

Design & Technology is accepted by the vast majority of universities as an acceptable qualification for entry into many higher education courses. Examples of possible courses include: Architecture, Automotive Design, Industrial Design, 3D Product Design, Engineering, Design & Marketing and many more.

CAREER INFORMATION

Students will gain skills that are useful in a wide range of jobs, in further study of design or engineering and in their personal life. They will develop decision making skills, including the planning and organisation of time and resources when managing a project as well as building and developing on their knowledge and understanding from GCSE, whilst also having the freedom to focus in more depth on areas of design and technology that most interests them. This allows access to a range of future career aspirations in the design and engineering industries, leading to future careers in product design, engineering, architecture, fashion and graphic design; it will develop thrit design and thinking skills that open up a world of possibility, providing the tools to create the future.

EXTRA COSTS

Students will have access to a range of materials provided by the department, however, they will be required to purchase their own sketching/drawing equipment. Contributions will be required for materials and some electronic components used in major projects.