



Design and Technology is an inspiring, rigorous and practical subject. In formulating our new GCE endorsed titles; Design Engineering, Fashion and Textiles and Product Design, OCR worked closely with Higher Education and industry to ensure that the direction of the qualification supports progression beyond A level.

There is a focus on ensuring the content reflects authentic practice, giving an insight into the way that creative, engineering and/or manufacturing industries function. The OCR specifications require you to apply mathematical and scientific knowledge, understanding and skills and reflects the importance of Design and Technology as a pivotal STEM subject.

## Have you ever wondered ...

Have you ever wondered what designers actually do?

Have you ever wondered how things move or work?

Have you ever wondered how you can design products to be good for the environment?

Have you ever wondered how a product continues to stay popular in the market place?

Have you ever wondered how products are designed with the user in mind?



## Key Features

We offer three endorsed titles 'Design Engineering', 'Fashion and Textiles' and 'Product Design'. Each of these have common elements so content that can be co-taught. This provides the opportunity for centres to offer more than one title. The content of all the new OCR Design and Technology qualifications have been set out in the following sections.

- identifying requirements
- learning from existing products and practice
- implications of wider issues
- design thinking and communication
- material considerations
- technical understanding
- manufacturing processes and techniques
- viability of design solutions
- health and safety

In both Fashion and Textiles and Product Design, materials and components are studied from the perspective of analysing modern consumer products that are designed to meet identified consumer needs, their design and manufacture. These are taught within the context of product development and industrial and commercial practices within the chosen area of study. In all three titles, the wider issues affecting design decisions are also covered.

## What's included

During the two year course, you will study a range of materials. You will develop a technical understanding of how products function and how they are made to appropriately support the design and manufacture of your own design solutions. You will learn about wider design principles and the affect of design on users and the world we live in.

You will identify market needs and opportunities for new products, initiate and develop design solutions, and make and test prototypes/products. You will develop your subject knowledge, including how a product can be developed through the stages of prototyping, realisation and commercial manufacture.

### 1. Design Engineering:

The 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.

### 2. Fashion and Textiles:

The subject content of this title is is focused towards fashion and textiles products and accessories in a range of applications; their analysis in respect of materials, process, trends and use in relation to industrial and commercial practices of fashion and textiles.

### 3. Product Design:

The subject 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.

## How will you be assessed?

### 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. You will be required to identify a design opportunity or problem from a context of your own choice, and create a chronological portfolio supported by real-time evidence of your 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 you to demonstrate your 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.

### AS level

A non-examined 'Product Development' task makes up 50% of the AS qualification, this will be on a given context that is open to your interpretation, the 'Product Development' will be user-centred and either deliver iterative improvements to an existing product or re-purpose a product for alternative use through iterative 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 50% of the AS qualification and assesses analysis of existing products, technical knowledge and understanding of materials, product functionality, manufacturing processes and techniques and allows you to demonstrate your understanding of design thinking and wider social, moral and environmental issues that impact on the design and manufacturing industries.

## What are the benefits?

- the course will strengthen your critical thinking and problem solving skills within a creative environment, enabling you to develop and make prototypes that solve real world problems, considering your own and others' needs, wants, aspirations and values
- you will develop intellectual curiosity of the design and manufacture of products and systems, and their impact on daily life and the wider world, making you a more discriminating purchaser
- it will help you to be creative in your approach to work and develop your sketching ability and use of digital technologies in designing and creating quality products
- you will learn about a range of materials and, components and manufacturing methods to help create functional products
- you will learn to work collaboratively to develop and refine your ideas, responding to feedback from users, peers and expert practitioners
- you will gain an insight into the creative, engineering and/or manufacturing industries and learn about the iterative design practices and strategies they use
- you will learn about important issues that effect design in the wider world such as sustainability, globalisation and inclusive design; in order to become an empathetic and successful designer who can consider wider social implications of products



## Where can the qualification take me?

- you will gain skills that are useful in a wide range of jobs, in further study of design or engineering and in your personal life develop decision making skills, including the planning and organisation of time and resources when managing a project
- you will build and develop on your knowledge and understanding from GCSE whilst also having the freedom to focus in more depth on areas of design and technology that most interests you. 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 your design and thinking skills that open up a world of possibility, providing the tools to create the future

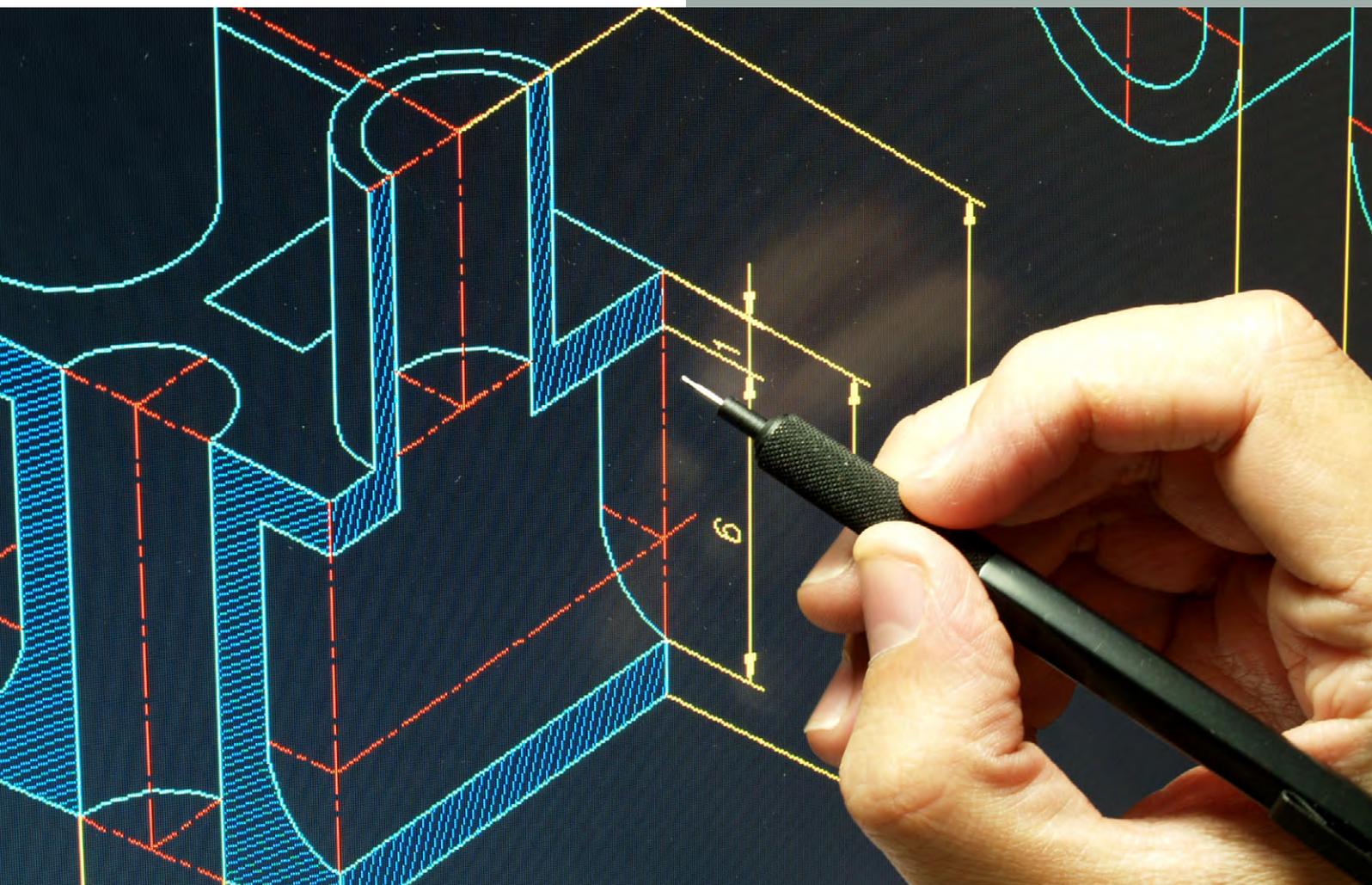
## Thought provoking questions

Have you ever wondered why some things go together and others clash?

Have you ever wondered how a product continues to stay popular in the market place?

Have you ever wondered why 80 percent of most products usage involve only 20 percent of its features?

Have you ever wondered how designers can use less resources and design products to ensure a sustainable future?



**OCR Resources:** *the small print* : OCR acknowledges the use of the following content: Cover: Girl printing prototype on 3D printer - science photo/Shutterstock.com; Page 2: Machinery and equipment in a spinning production company - Yuangeng Zhang/Shutterstock.com; Page3: Machinery and equipment in a spinning production company-QiuJu Song/Shutterstock.com, CAD drawing Fernando Blanco Calzada/Shutterstock.com