



***Our Motto is "The Pursuit of Excellence"***

## **Wootton Academy Trust**

Wootton Upper School and Kimberley 16 - 19 STEM College (in the nearby village of Stewartby) are operated by Wootton Academy Trust [WAT]. The two institutions are 3 miles apart and linked by a shuttle bus. WAT is highly ambitious and its vision is to provide outstanding education in all of its component parts.

Wootton Upper School was inspected in November 2017 and received a very positive report. The school was judged to be good in all areas. Wootton Upper School, with 900 pupils across Years 9 - 11, achieves results across the core subjects which are very high. Our GCSE English and GCSE Science results are well-above the national average. In Mathematics, results are above the national average and improving. Outcomes at KS4 in Graphics and Product Design are improving rapidly.

Kimberley College 16-19 STEM College opened in September 2013 and has 650 students. Numbers will grow to near 700 in September 2022. The College was inspected in January 2017 and judged good in most areas and outstanding in personal development and well-being. For the last two years the College has been in the Sunday Times list of the top 20 Sixth Form Colleges in the UK based on the proportion of students getting 2As and 1B or better in facilitating subjects. A Level Product Design was introduced in September 2021. Graphics and Engineering are already very popular and successful at Kimberley.

## **The Design Technology Department**

The Design Technology Department at Wootton Upper School consists of three modern workshops and a graphics studio together with storage cupboards and a departmental office. There are ICT rooms nearby which the department accesses. The facilities at Kimberley College for Technology and Engineering are state of the art.

The Trust is keen that Technology becomes a beacon at both Wootton Upper School and Kimberley College. Our aim is that every student gains enjoyment from their study of Design Technology options. We want all technology lessons to be dynamic, varied and interesting, with all students being challenged in a supportive environment.

Currently, Graphics and Product Design are offered to Year 9 pupils as options; usually there are four groups run in each subject. At Key Stage 4, current Year 10 and Year 11 pupils may select AQA GCSE Graphics [from the Art and Design Specification] and AQA GCSE Design Technology

At Kimberley College our Sixth Formers are able to select AQA A Level Design Technology [Product Design]; Level 3 BTEC Graphics as a National Diploma, and Level 3 BTEC Engineering as an Extended Certificate. Given Kimberley's STEM specialism, the Trust is keen to see all its technology and engineering courses flourish there.

Many Kimberley students go on to study Engineering at university [including those who have studied Maths, Further Maths and Physics at A level]; students also go on to engineering apprenticeships. Graphics is a very popular choice at university; the current KS5 Graphics specialist has built links with many higher education institutions.

## **Department Staff**

There are four members of the Design Technology team; in addition to the Director - who is a Graphics specialist, currently there are two other teachers and a technician. One of the two teachers is a Graphics specialist, who is able to teach Product Design. The other two teachers are Product Design specialists, who can teach Graphics.

This new post reflects the increasing popularity of courses offered by the department and continuing growth in numbers at the STEM College.

We are happy to consider applications from full time or part time applicants.

If you would like any further information on our Design Technology Department or arrange a visit, please send an email to [recruitment@wootton.beds.sch.uk](mailto:recruitment@wootton.beds.sch.uk).

# DESIGN AND TECHNOLOGY: PRODUCT DESIGN

## COURSE OVERVIEW

A-level Design and Technology: Product Design requires students to engage in both practical and theoretical study. This course requires students to cover design and technology skills and knowledge of:

### 1. Technical Principles

Understand the appropriate use of materials including polymers, composites, woods and metals based on their physical and working characteristics.

### 2. Designing and Making Principles

Students will follow the design methods and processes, understand design theory, design styles and movements, how technology and cultural changes can impact on the work of designers, follow the design process and analyse and evaluate their work.

## KNOWLEDGE & SKILLS DEVELOPED

This creative and thought-provoking qualification gives students the practical skills, theoretical knowledge and confidence to succeed in a number of careers. Especially those in the creative industries.

They 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 prototypes of their choice.

Students will gain a real understanding of what it means to be a designer, alongside the knowledge and skills sought by higher education and employers.

Qualification: **A-Level**

Awarding Body: **AQA**

## ASSESSMENT METHOD

### Technical Principles

- Written exam: 2 hours and 30 minutes
- 120 Marks
- 30% of A Level

### Design and Making

- Written Exam: 1 hour and 30 minutes
- 80 Marks
- 20% of A Level

Practical application of technical principles, designing and making principles.

- Design and make project
- 100 marks
- 50% of A Level

## OPPORTUNITIES AND CAREERS

- Graphic design
- Fashion styling
- Art and design
- Media
- Engineering
- Photography
- Construction and building services
- Motor vehicle – technology and repair
- Junior product designer
- Theatre set carpenter
- Farrier
- Service technician
- Civil engineering technician
- Design and draughting technician
- Engineering model maker



“Design is concerned with how things work, how they are controlled, and the nature of the interaction between people and technology. When done well, the results are brilliant, pleasurable products.” – Don Norman (The Design of Everyday Things)



# GRAPHICS

## COURSE OVERVIEW

The course consists of two components.

**Component 1** is to produce a portfolio that is made up of 2 projects where pupils will learn a range of hand-rendered and computer-generated design work.

The first of the two projects will teach students about designing creative compositions using typography and imagery. Pupils will learn extensively how to use Adobe Illustrator and Photoshop to edit and create their own typography and arrange lettering and imagery to create eye-catching graphics.

The second project will be about creating graphic design and illustration inspired by stories and will involve a trip The Warner Brothers Studio where pupils will take photographs.

**Component 2** is an Exam project that is worth 40% of the overall grade.

Pupils will get their final exam paper in January in Year 11. They will have four months to develop a portfolio of work in response to a choice of seven different projects on the exam paper. In May, the pupils will sit a two-day (10 hours) practical exam. This exam will be in a graphics classroom where they will produce a final piece of design work based on their four months' preparatory work.

## KNOWLEDGE & SKILLS DEVELOPED

Pupils will learn how to draw using a range of hand and digital media, create typography, edit photography and produce graphic design using industry standard programs such as Adobe Photoshop and Illustrator.

Throughout the projects, students will develop their skills taking and editing photographs using Photoshop and creating hand-rendered and digital drawings in response to a story and learn how to arrange their illustrations and photographs with typography to create a range of creative designs.

Qualification: **GCSE**

Awarding Body: **AQA**

## ASSESSMENT METHOD

**Component 1** is to produce a portfolio of work worth 60% of the overall grade. This is made up of 2 projects that are aimed at developing and demonstrating your drawing and design skills using a range of digital and hand rendered media.

**Component 2** is an Exam project that is worth 40% of the overall grade. This is a practical project that is set in January of year 11 by the exam board.

## POST 16 OPPORTUNITIES AND CAREERS

Graphic Communication is a very open subject and can lead on to numerous creative careers. The skills you will learn during GCSE Graphics will develop your creative thinking, designing, drawing as well as learning a range of technical skills. These skills can be developed in the future study of: Fine art, Graphic Design, Illustration, Animation, Web design, Advertising, Architecture, Engineering, Fashion and textiles, Games design, Journalism, Media, Film making, Product design, Software design and Technical editing.

On successful completion of the course, you may decide to do Graphic Design A-Level or BTEC at level 3.



“You have the freedom to create what you want within a section and get good advice from an experienced teacher.”



# DESIGN AND TECHNOLOGY

## COURSE OVERVIEW

This course encourages a practical approach to problem solving, following a series of set briefs, and allows pupils to design and make products with creativity and originality. They will experience a variety of practical disciplines and use a range of materials and techniques. It aims to equip pupils to design and produce products with broad consumer appeal and real market feasibility.

This qualification is modern and relevant, so pupils can learn about contemporary technologies, materials and processes, as well as established practices.

This course places greater emphasis on understanding and applying iterative design processes. Pupils will use their creativity and imagination to design and make prototypes that solve real and relevant problems.

Pupils will develop skills in core technical principles, specialist technical principles and designing and making principles. The practical portfolio will be supported by academic theory.

## KNOWLEDGE & SKILLS DEVELOPED

What will I learn?

- You will learn about different resilient materials.
- How to safely use a range of tools and machinery.
- How to cut, shape, form, bend, cast, mould, clean and finish materials.
- How products are made in the real world.
- How to use the laser cutter, 3d printer and computer-controlled router.
- About the work of popular designers and produce products aimed at specific target markets.

Through practical and theory-based lessons pupils will gain confidence in all materials as well as their chosen material specification. They will learn fundamental skills within Design and Technology learning from, wider influences, including historical, social/cultural, environmental and economic factors. Year 11 - Pupils will undertake component 2; design and make task. During the year they will be able to complete a detailed design and make project given by the exam board.

Qualification: **GCSE**

Awarding Body: **AQA**

## ASSESSMENT METHOD

**Component 1** is written exam worth 50% of the overall grade.

**Component 2** is a Non-Exam assessment that is set by the exam board and completed within 30-35 hours project that is worth 50% of the overall grade.

## POST 16 OPPORTUNITIES AND CAREERS

Product Design pupils become more confident and skilled in the use of tools and machines and develop real life practical skills that prove valuable in everyday life.

You will have a choice of level 3 courses at Kimberley College. BTEC Level 3 Graphics and BTEC Level 3 Engineering. Recommended complimentary subjects are A Level Maths and Physics.

The logical, creative and practical skills developed provides an excellent grounding for careers in design, the creative industries, engineering and manufacturing. Architecture and IT are also closely associated. You will be set up for a wide range of careers including construction, building services, motor vehicle repair and entrepreneurship.



“Design and Technology, is an amazing subject. Lots of hand on practical which is really fun! You get the chance to get a great understanding of different materials and how they could be used as well as using your own imagination to create prototype models.”



# ENGINEERING

## COURSE OVERVIEW

This course provides opportunities for developing the practical employability skills needed by our local and national engineering companies. The course will cover the following content of the:

- Health & Safety in the Engineering Workplace
- Engineering team work
- Communications for Engineering Technicians
- Applied Mathematics for Engineering
- Electrical and Electronic Principles
- Mechanical Principles and Applications
- Engineering Drawing for Technicians
- Engineering Design
- Computer Aided Drafting in Engineering
- Properties and Applications of Engineering Materials

## KNOWLEDGE & SKILLS DEVELOPED

You will evaluate engineering processes, explore safety regulations, use our CAD tools in our computer suit, practise production using our extensive equipment and provide a fully documented output.

We have regular opportunities with external agencies including work experience links, STEM challenges and centre visits.

**Qualification: BTEC Level 3**

**Awarding Body: EDEXCEL**

## ASSESSMENT METHOD

The qualification is equivalent in size to one A level. A variety of assessment methods are available making this course suitable for students who have an academic background but also enjoy developing their practical skills. Unit 1 does require high levels of mathematic competency

Unit 1 - Engineering Principles ( External exam)

Unit 3 - Engineering Product Design and Manufacture (Externally assessed task)

Unit 2 - Delivery of Engineering Processes Safely as a Team (Mandatory – internally assessed)

Unit 10 - Computer Aided Design in Engineering (Optional – internally assessed)

## OPPORTUNITIES AND CAREERS

A strong theme of this course will be the opportunity to engage in project-based learning, work experience with an engineering company and to engage in original research with support from leading universities.

Progression routes at the end of the course are very strong leading to a STEM subject at University, a Degree Apprenticeship, Direct Employment, a Foundation Degree or HND/HNC/NVQ.



Engineering is an excellent course for anyone who likes to know how things work and enjoys picking apart a problem. Now that I have been studying engineering for a year, I am more aware of how certain things are made and processes involved in making such products. This has led to me noticing how products can be improved and innovated upon.

