



Welcome

'A' Level Design and Technology (Product Design) has proved to be a very popular and successful course over the years. Many students have chosen this course to combine with other creative subjects such as Art or Photography, or have chosen it to contrast with other less practical subjects such as Maths or Physics. Students choosing this course typically will have studied either Engineering at KS4, or Design Technology as it offers a good progression route. However, we get a number of students each year opting for this who have studied neither before and they adapt very quickly.

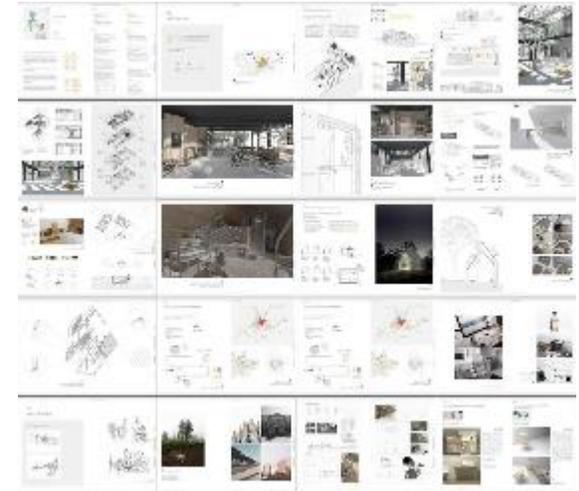
The course is assessed by 50% exam and 50% coursework. Both units are completed at the end of Year 13.

The course aims to prepare our students to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages students to make positive changes to their quality of life. The subject encourages students to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. The practical applications of mathematical and scientific concepts are combined with practical skills, and an understanding of aesthetic, social and environmental issues together with industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Technology helps all students to become discriminating and informed consumers and potential innovators.

KS5 - Year 12 Course Content

Year 12 mixes the teaching of theoretical subject knowledge, combined with the practical application of this knowledge through workshop activities. Topics covered in Year 12 include:

- Materials and their applications
- Performance characteristics of materials
- Forming, shaping and machining processes
- Modern industrial and commercial practices
- Digital design and manufacture
- Health and safety



Many theoretical concepts will be taught through practical activities allowing students to experience hands on application of these topics, whilst also developing and enhancing high level practical skills essential for the coursework element of the course.

The coursework topic will be introduced at the end of Year 12 allowing students to apply what they have learnt to their design development work.

KS5 - Year 13 Course Content

Year 13 builds on the skills and knowledge developed in Year 12. The main focus of the year is completing the design portfolio and prototype for the coursework element of the course. There is also time devoted each week to revisiting and developing the knowledge covered in Year 12. Additional topics will be covered such as:

- Critical analysis and evaluation
- Responsible Design
- Forming, shaping and machining processes
- Design for manufacture and project management
- National and International Standards in product design

At the end of Year 13, students will submit their design portfolio and manufactured prototype for the coursework element as well as sitting the final exam.



KS5 – Destinations

The hard work of our students not only results in fantastic results, but also opens up a huge range of opportunities for them. Many students typically continue into a career in design, especially those who combined their studies with other creative subjects. Some choose to use the array of transferable skills that they have developed to pursue careers in other fields. Typically around 60% of our students will continue their studies at University, with the remainder following either careers or Higher Apprenticeship programs with employers.

Students have gained University places to study:

- Mechanical Engineering – Queen Mary University London
- Mechanical Engineering - UCL
- Civil Engineering – Imperial College London
- Aerospace Engineering (with space technology) – University of Hertford
- Industrial Design – Brunel University
- Mechanical Engineering – De Montfort University

Students have gained employment or Higher Apprenticeship programs with:

- Hovis (Engineering and manufacturing) – Huddersfield and Forest Gate
- Stagecoach (PSV maintenance) – Barking
- MED (Computer Aided Design) – Upminster
- Kone (electrical/mechanical engineering) – Central London

Subject Specific Links and visits

A range of TV series are available on a variety of DT and Engineering topics. Programmes on channels such as 'Quest' like 'How it's Made' and 'Mighty Planes' or even BBC2's 'Top Gear' all provide an insight into design and manufacturing in applied situations.

Places to visit linked to DT and Engineering:

There are many interesting places which you can visit to help support your child's understanding of Design Technology and Engineering

The Science Museum – The Science Museum is the most visited science and technology museum in Europe. There are over 15,000 objects on display, including world-famous objects such as the Apollo 10 command capsule and Stephenson's Rocket. www.sciencemuseum.org.uk

The Design Museum – Located on the River Thames, near Tower Bridge, the Design Museum offers inspiring insights into the world of design with exhibitions on fashion, architecture, furniture, graphic, product, transport and digital design. Alongside its cutting edge programme of temporary exhibitions the museum also hosts a variety of talks and family activities. www.designmuseum.org

The Faraday Museum at the Royal Institution – This grand building just off Piccadilly has been home to 14 Nobel prizewinners, and housed the laboratories of some of the world's greatest scientific minds. The small but entertaining exhibition explores the illustrious history of the RI, and uses animations and comedy to explain some of the groundbreaking concepts and equipment on show. www.rigb.org/visit-us/faraday-museum

The Royal Gunpowder Mills – Located in Waltham Abbey, The Royal Gunpowder Mills is a great place for families to spend days out exploring the secret history of gunpowder, explosives and rocket propellants through our engaging interactive Exhibitions, Science Shows and Children's Activities. www.royalgunpowdermills.com

Kirkaldy Testing Museum – In Southwark, David Kirkaldy and his machine helped shape today's world, testing materials for such as bridges from St Louis to Sydney via Blackfriars; railways; Liberty ships; the Skylon and Comet airliner. His Victorian workshop still houses the working machine and more. Open on the first Sunday of each month. www.testingmuseum.org.uk

London Transport Museum – This museum whisks you on a journey of London's transportation system since 1800, through fascinating and colourful displays, bus and tube simulators and many family-friendly interactive games and activities. www.ltmuseum.co.uk

The Crystal – The Crystal, located in Docklands, a sustainable cities initiative explores the future of cities. Home to the world's largest exhibition focused on urban sustainability and a world-class centre for dialogue, discovery and learning. The Crystal lets students experience first-hand many of the pioneering solutions and innovative technologies that are driving future trends for a more sustainable world. www.thecrystal.org

Any Questions?

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<https://www.thewarrenschoo.net/the-sixth-form/the-sixth-form-phase/welcome-to-the-sixth-form/>