A Level Design and Technology

Key skills and careers - Where can D&T A Level take me?

What skills and attributes do I need to do well in this subject?

- Enjoy Technology and design GCSE
- Have an interest in design
- Have the ability to produce hand sketches to a good standard
- Understand how to use SolidWorks software for computer aided design
- Have knowledge and understanding of materials and manufacturing processes
- A good work ethic , meeting deadlines and being motivated to work outside of class on project work

Careers

Studying Design and Technology will develop skills in identifying problems and creating solutions, developing design ideas, practical skills in hand, machine and CAD/CAM techniques, critical thinking and self-evaluation.

These skills can lead onto studying in further or higher education in a range of areas and potential careers such as:

- A number of engineering opportunities
- Product Development
- Product Design
- Prosthetics
- Architecture
- Graphic Design
- Set/Special effects designer
- Performing arts technician
- Technical stage manager
- Web designer
- Cybernetics
- Teaching
- Printing
- E-Textiles
- Vehicle Design
- Dental Technology
- Medical Technology

These are only some of the many fields open to Design and Technology students
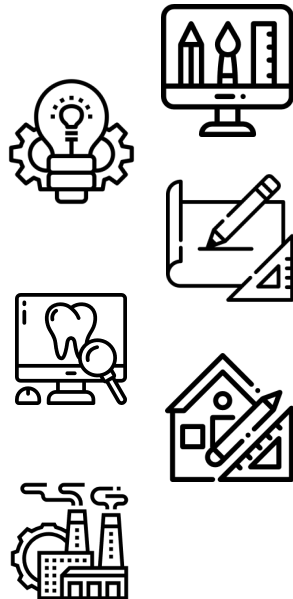
A Level Design and Technology

Exam board EQUQAS

Design   **Develop**   **Sketch**   **Problem Solve**   **Prototype**

Manufacture   **CAD/CAM**   **Evaluate**   **Innovate**

Design and Technology is an inspiring, rigorous and practical subject. It encourages students to use creativity and imagination when applying iterative design processes to develop and modify designs, and to design and make prototypes that solve real world problems, considering their own and others' needs.

Design and Technology enables students to identify market needs and opportunities for new products, initiate and develop design solutions, and make and test prototypes.

Content	Assessment	Weighting
Design and Technology A Level is a 2 year course (No AS level exam or coursework)		
Design and Technology in the 21st Century	3 Hour written exam **completed in Year 14**	50% of overall A Level
Design and make project	Coursework consisting of a sketch book, portfolio and manufactured product	50% of overall A Level **Completed across Yr 13 & 14**

Theoretical unit:

Design and Technology in the 21st Century

3 hour written examination worth **50% of the qualification**

The examination includes a mix of structured and extended writing questions assessing a student's understanding of technical, designing and making principles. Students will also analyse and evaluate design decisions and wider issues in design and technology.

Units of study include:

Designing and innovation

This section is concerned with learners developing their ability to design and enhance their basic design skills in order to solve problems. Learners should also develop an understanding of a range of external influences and demands which affect the work of product designers.

Materials and components

This section is about developing a general appreciation of the wide range of materials and components available to designers and manufacturers. This general appreciation should be supported by a more detailed knowledge of a range of materials, partly developed through use in coursework.

Processes

This section is about developing a detailed knowledge and understanding of a broad range of processes leading to the acquisition of associated skills through practical activity.

Industrial and commercial practice

This section is about understanding various methods of production and being able to apply appropriate commercial practices in practical projects.

Product analysis and systems

This section is about understanding the requirements a product must satisfy, critical assessment of existing products and visualising new products in a context of past, present and future possibilities.

Human responsibility

This section is about acquiring the knowledge and understanding needed to support design activities through an increased awareness of the designer's social, moral, ethical and legal responsibilities. It also allows learners to explore the environmental and consumer factors which impact on designers and which might affect the final nature of a product.

Public interaction – marketing and research.

This section is about product design and its place in the market, for example how a design idea may be transformed into a marketable product. It seeks to examine the many factors influencing product design, market research techniques and their influence on producing innovative products. Learners should develop an appreciation of the effects of social, economic, cultural and ethical issues in addition to material and manufacturing technologies.

Coursework unit:

Design and make project

Completed across year 13 and 14 worth **50% of the qualification**

A sustained design and make project, based on a brief developed by the student, assessing their ability to:

- identify, investigate and outline design possibilities

- design and make prototypes

- analyse and evaluate design decisions and outcomes, including for prototypes made by themselves and others

Elements the coursework will focus on include:

- User centred design

- Design theory (historic movement)

- The application of design knowledge and understanding

- Considering social, moral and ethical factors

- Critical analysis of ideas and decisions

- Selecting and using specialist tools, equipment and techniques

- Accuracy and precision

- Evaluation of prototypes

- Using a range of strategies to explore, create and evaluate design ideas

- Project management

- Considering environmental factors

- Design for manufacture including accuracy, efficiency and scale of production

- Understanding the stages of a product life cycle

- Applying relevant safety standards

The fun stuff: what is fun about studying Design and Technology A Level

- Learning and understanding why and how people use products

- Developing your drawing skills both hand sketches and CAD

- Learning about and using a range of materials and processes

- Independently design and make a product for a client using your own ideas and skills