

A Level Design and Technology: Product Design

A Level Design & Technology: Product Design is delivered at the Robert Carre Trust and also St George's Academy.

At the Robert Carre Trust there will be the opportunity to follow a Resistant Materials focus and at St George's Academy the focus will be on Conceptual Design and Graphics. The course principles, structure and assessment methods are the same.

ASSESSMENT

The course is divided into two components:

1. Principles of Design and Technology
2. Independent Design and Make Project

Component 1: Principles of Design and Technology

Written examination: 2 hours 30 minutes

50% of the qualification

Students will be assessed under exam conditions at the end of the course in the following areas:

- Topic 1: Materials
- Topic 2: Performance characteristics of materials
- Topic 3: Processes and techniques
- Topic 4: Digital technologies
- Topic 5: Factors influencing the development of products
- Topic 6: Effects of technological developments
- Topic 7: Potential hazards and risk assessment
- Topic 8: Features of manufacturing industries
- Topic 9: Designing for maintenance and the cleaner environment
- Topic 10: Current legislation
- Topic 11: Information handling, Modelling and forward planning
- Topic 12: Further processes and techniques.

Component 2: Independent Design and Make Project

Non-examined Assessment (NEA)

50% of the qualification

Students will produce a portfolio of evidence and prototype of a solution. Students will be encouraged to think creatively and with imagination while applying the design process. Typically, students produce outcomes that incorporate woods, metals and polymers using a range of traditional and modern techniques. Students will produce work that includes:

- Part 1: Identifying Opportunities for Design
- Part 2: Designing a Prototype
- Part 3: Making a Prototype
- Part 4: Evaluating own Design and Prototype

LESSONS

A variety of skills are required to undertake the Independent Design and Make Project. In order to best prepare students for this a variety of approaches will be used so that students feel competent in all aspects of Design and Technology. Skills developed through investigations, focused practical tasks and further study will likely include:

- Graphical Communication techniques
- 3D and 2D CAD (Solidworks and 2D Design)
- Competent use of hand tools and machinery
- Analysis of products
- An understanding of how school processes can be used to produce 'one-offs'
- Use of Smart Materials in modern products

INDEPENDENT STUDY TIME

Students are expected to use their time outside of the classroom liaising with clients, undertaking primary research and progressing their projects.

Design and Technology: Product Design students in Sixth Form are likely to use their free time to:

- Conduct wider reading around the subject to develop their wider awareness of Design and Technology.
- Discuss the progress of their Independent Projects to maximise work produced during lesson time.
- Use specialist software to become more adept in the use of 3D and 2D CAD.

CAREERS

A qualification in Design and Technology: Product Design can lead to a number of careers in Ergonomics, Engineering, Automotive Engineering, Mining, Teaching, Architecture all aspects of Design and Manufacture and many more. Due to the fact that Design and Technology has a crossover of Art, Mathematics and Science as a subject, it has the advantage of being flexible in the work place and students are also seen as flexible and able to multi task.

ENTRY REQUIREMENTS

The minimum entry requirements for Level 3 applied study apply. Previous successful study of Design & Technology is also required as demonstrable by grade 6 in GCSE Design & Technology (Graphics, Electronics or Resistant Materials), or equivalent in a Cambridge National in Engineering course.

Design Technology: Design Engineering A Level

ASSESSMENT

The course is divided into three components:

1. Principles Examination, 26.7%
2. Problem Solving in Design Engineering, 23.3%
3. Iterative Design Project, 50%

COMPONENT 1: PRINCIPLES OF DESIGN ENGINEERING EXAMINATION

Written Examination: 1 hour 30 minutes

The exam requires students to:

- Analyse existing products.
- Demonstrate their technical knowledge of materials, product functionality, manufacturing processes and techniques.
- Demonstrate their understanding of wider social, moral and environmental issues that impact on the design and manufacturing industries.

COMPONENT 2: PROBLEM SOLVING IN DESIGN ENGINEERING

Written Paper: 1 hour 45 minutes

The exam requires students to:

- apply their knowledge, understanding and skills of designing and manufacturing prototypes and products.
- demonstrate their higher thinking skills to solve problems and evaluate situations and suitability of design solutions.

COMPONENT 3: ITERATIVE DESIGN PROJECT (NON-EXAMINED ASSESSMENT, NEA)

The Iterative Design Project undertaken by students will have a significant focus on the functional requirements and/or system of a product. This substantial project will have a mechanical or electronic bias and will focus on a functional rather than aesthetic outcome.

Students will identify an opportunity or problem from a context of their choice and create a portfolio of evidence leading to an outcome. Students will undertake the Iterative Design Project independently and will progress through the following principles:

- AO1 - Explore: Identify, investigate and outline design possibilities to address needs and wants.
- AO2 - Create: Design and make prototypes that are fit for purpose.
- AO3 - Evaluate: Analyse and evaluate.

LESSONS

A variety of skills are required to undertake the Iterative Design Project. In order to best prepare students for this, a variety of approaches will be used so that students feel competent in all aspects of Design and Technology. Skills developed will include:

- Component and circuit functionality
- Circuit construction techniques
- Graphical communication techniques
- 3D and 2D CAD (Solidworks and 2D Design)
- Circuitry designing software (Circuit Wizard)
- Competent use of hand tools and machinery
- Analysis of products
- An understanding of how school processes can be used to produce 'one-offs'

INDEPENDENT STUDY TIME

Design and Technology: Engineering Design students are likely to use their free time to:

- Conduct wider reading around the subject to develop their wider awareness of Design and Technology.
- Discuss the progress of their Iterative Design Project with teachers to maximise work produced during lesson time.
- Use specialist software to become more adept in the use of 3D CAD, 2D CAD and Circuit wizard.

OCR: A-Level Design and Technology: Engineering Design

ENTRY REQUIREMENTS

The minimum entry requirements for Level 3 academic study apply. In addition, Grade 6+ in Mathematics and Physics, 7 recommended. It is strongly recommended that students are taking A-Level Maths and/or Physics alongside Design and Technology: Design Engineering. Grade 6 in Design and Technology or Distinction from a related technical subject are required.



A Level Design and Technology: Fashion and Textiles

A Level Fashion and Textiles is an interesting and exciting subject which allows the student to build upon the skills learned at GCSE, developing theoretical and practical knowledge of the fashion industry in the 21st Century. There is a balance between the practical assignments and the theoretical content. The Fashion and Textiles theory has been updated and is taught where ever possible through practical application.

A Level examination board AQA

Design and Technology Fashion and Textiles A Level is an inspiring, rigorous and practical subject. The qualification enables students to identify market needs for new products for the fashion, clothing and textiles industries, to initiate and develop design solutions, and to make and test prototypes and products. Students are encouraged to use creativity and imagination to develop and modify designs and make products that solve real and relevant problems. Students are encouraged to integrate and apply their understanding and knowledge from other subject areas studied during Key Stage 4, with a particular focus on science and mathematics.

The qualification will consist of three units:

Unit 1 and Unit 2: The Technical Principles of Fashion and Textiles.

This is assessed by two written examination papers, which each constitute 25% of the qualification.

Unit 3: Non-Examined Assessment.

A substantial design, make and evaluate project that fully exemplifies their skills, knowledge and understanding of fashion and textiles. The project will allow students to demonstrate their abilities in the iterative processes of designing, making, testing, refining, improving and evaluating. This constitutes 50% of the qualification.

AREAS OF STUDY INCLUDE:

Technical knowledge and understanding.

The characteristics and working properties of materials relevant to fashion design; fabric, component and product construction methods and manufacture; the applications of smart materials, e-textiles and technical textiles; digital design and manufacture; how skills and knowledge from other subject areas, including mathematics and science, inform decisions in design and the application or development of technology; the role of marketing, enterprise, innovation and collaboration in the development of products.

Designing and making principles.

Industrial and commercial practice including manufacturing processes, the use of ICT, pattern cutting, product manufacture and repair, production scales and quality control in relation to textiles and the fashion industry; pattern drafting, toiles and testing systems; product analysis and evaluation of prototypes and products; the environmental factors affecting the fashion and textile industry.

CAREER OPPORTUNITIES

Fashion Design; Fashion Engineering; Textile Design; Fashion Journalism; Retail management; Textiles Technologist; Pattern Cutter; Costume Design; Garment Technologist; Marketing; Quality Control; Interior Design; Fashion Forecasting; Fashion Buyer; Fashion Consultant. Be part of the globally influential fashion industry worth £26 billion to the UK economy.

ENTRY REQUIREMENTS

The minimum entry requirement for Level 3 academic study apply. In addition, applicants will require a grade 6 in GCSE Design and Technology Textiles.

FOR FURTHER INFORMATION:

www.aqa.org.uk

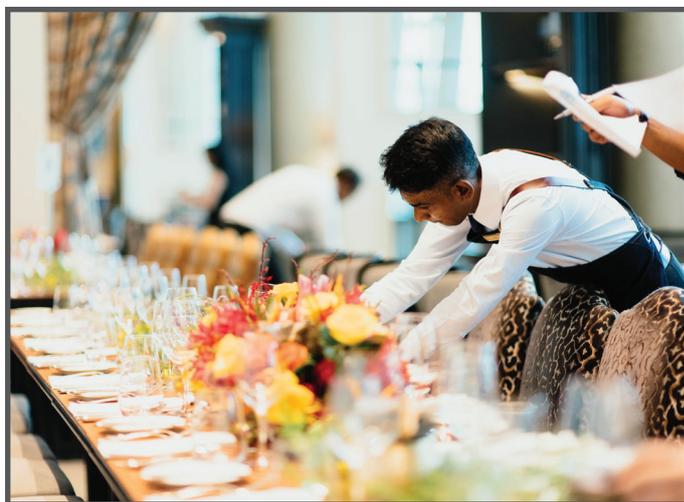


CTEC Level 3 Diplomas in Art & Design - Textiles

If you are a student who enjoys the practical side of textiles, then you will be pleased to know that we are looking to offer a vocational and more practical alternative to the A Level course. This course offers a much more 'hands on' approach and includes practical tasks relating to decorative and constructive textiles and garment-making. Alongside this students will undertake research and investigations to gain a detailed and thorough insight into the fashion industry. This will involve students covering 6 units which, over the course of the two years, will result in the award of a L3 qualification equivalent to one 'A' Level. There is no written examination. Students can also study Textiles alongside both Art and Photography to gain either a double or a triple award.

ENTRY REQUIREMENTS

The minimum entry requirements for Level 3 applied study apply. In addition, students must have achieved at least a grade 4 or Merit at Level 2 in a creative subject.



BTEC Level 3 Diploma in Hospitality (with Catering)

AIMS OF THE COURSE

This Level 3 course is a two-year course designed for those students who have an interest in the hospitality and catering industry, having studied hospitality, catering or a related food subject at Level 2 and may wish to progress onto a higher level of study or to move into the Hospitality and Catering industry.

COURSE CONTENT

The course focuses on the skills and knowledge required by supervisors and managers in the hospitality industry. Practical cooking skills are studied on this course as well as study of the hospitality industry. The sector-specific studies will focus around the Level 3 BTEC Subsidiary Diploma in Hospitality (equivalent to one A Level) and, if demand is sufficient, they can also study for the Level 3 BTEC Diploma in Hospitality (equivalent to two A Levels).

SKILLS REQUIRED

Good interpersonal skills and an interest in the hospitality and catering industry are essential. The majority of this course is assessed through coursework and practical assessment, but there will be some examined content. Although practical ability is vital, the ability to write coherently and undertake research will be equally important.

CAREER OPPORTUNITIES

Upon completion of this course, students could progress to further study at university or apply for an Apprenticeship in this area with an employer to continue a work based learning programme. Students may also wish to apply for a junior position in a catering or hospitality business.

COURSE ENTRY REQUIREMENTS

The minimum entry requirements for Level 3 applied study apply. In addition, students must have studied a related food, catering or hospitality course at Level 2 and have a keen interest in cooking and the hospitality industry. The ability to work with others, research and present work with creativity, as well as having good communication skills is also very important.



VTCT Level 2 Diploma in Professional Cookery

AIMS OF THE COURSE

This is a full-time course which aims to provide the learner with a wide range of practical skills and knowledge around a number of food components required in a professional kitchen. The course will aid future employment in the hospitality and catering sector.

COURSE CONTENT

The course follows structures, routines and expectations found in a professional kitchen. Providing candidates with a large number of practical skills and theoretical knowledge categorised into modules. Each module requires the learner to produce a portfolio of work and when required learners are assessed through a practical exam in a professional kitchen.

SKILLS REQUIRED

A suitable candidate should have good knowledge of components and understanding of how flavours work in dishes. The ability to cook and present a variety of sweet and savoury dishes to a high standard is also essential.

CAREER OPPORTUNITIES

Participation of this qualification increases the chances of gaining employment in the hospitality and catering sector as well as access to further catering qualifications.

ENTRY REQUIREMENTS

To select this course students must have studied a related food, catering or hospitality course at level 2 and have an interest in cooking with a career aspiration of entering the hospitality industry.