

AS/A2 Level DESIGN AND TECHNOLOGY



Course Guide

Level 3 Two-year course

2010/11

This course is for students who are seeking a career in product design, engineering, architecture, environmental design or the built environment. Students should have a keen interest in products, systems and the design process and be prepared to demonstrate creative, presentation and research skills.

Subject introduction

National Classification Code: 9080

Design & Technology can be used as a complimentary subject to Mathematics, ICT or a Science based course or to provide a contrast to Humanities. It is of course a firm foundation for students wishing to progress to A2 Design and Technology

This course encompasses a wide range of design disciplines but is firmly rooted in the skills required to design and make high quality products. Products that are fit for purpose, satisfy wants or needs, enhance our day-to-day lives and incorporate care for the environment. This course has increased emphasis on creativity and sustainability and will encourage you to explore ideas of originality and value, to question and challenge, to envisage what is and what could be. Practical skills will be developed through the coursework projects, which will involve you working through a range of design briefs.

Year 1 study outline

The AS comprises two units:

Unit 1 – Portfolio of Creative Skills

In this unit, students are given the opportunity to develop their creative, technical and practical skills through a series of product investigation, design and manufacturing activities. You will produce a portfolio with three distinct sections, which will demonstrate your creativity and flair when investigating, designing and making products.

Unit 2 – Design and Technology in Practice

In this unit, you will develop a knowledge and understanding of a wide range of materials and processes used in the field of design and technology. You will study the following:

- Materials and components
- Industrial and commercial practice
- Manufacturing techniques for mass production

SEE WHAT'S NEXT

- Material removal, forming and joining techniques
- Heat Treatment
- Conversion, seasoning and faults in woods
- Computer Aided Design (CAD), Computer Aided Manufacture (CAM)
- Modelling and Prototyping
- Quality assurance systems & quality control in production
- Meeting specifications and tolerances
- Health & Safety at Work Act (1974)

Year 2 study outline

A2 Comprises 2 units.

Unit 3 – Designing for the Future

You will study the following aspects:

- Information and Communication Technology (ICT)
- Biotechnology, Robotics and Artificial Intelligence (AI)
- Manufacturing Systems
- Computer Integrated Manufacture (CIM)
- The effects of technological changes on society
- Influences of design history on the development of products

- Form and Function
- Anthropometrics and Ergonomics
- Life Cycle Assessment (LCA)
- Cleaner design and technology
- Minimising waste production
- Renewable and non-renewable sources of energy
- Responsibilities of developed countries

Unit 4 – Commercial Design

In this unit you are given the opportunity to apply the skills you have acquired and developed throughout this course of study, to design and make a product of your choice that complies with the requirements of a resistant materials technology product, which is defined as a fully functioning product that matches its specification. It must be manufactured to full size using resistant materials. In order to reach high attainment levels, you must adopt a commercial design approach to your work, reflecting on how a professional designer might deal with a design problem and its resolution.

Methods of study

We aim to create a relaxed yet purposeful teaching environment, involving a variety of teaching and learning approaches. These include formal teaching, discussion, videos, homework, and student centered

research.

Project work will vary depending on whether you are studying at AS or A2 Level. For AS Level you will need to comply with the specific requirements associated with the Product Investigation, Product Design and Product Manufacture; for A2 with the requirements of Commercial Design. Your tutors, facilitators and technicians will support you. Work will be undertaken in a well-equipped workshop.

Subject combinations and careers

Mathematics and a science subject, especially Physics, are valuable to support your Design and Technology studies. We would advise against taking AS Design and Technology with other portfolio related courses due to the substantial coursework element. It would complement other academic subjects such as Business Studies and Geography.

Success stories

Currently students achieving A level Design and Technology are at universities studying for degrees in Industrial Design, Engineering, Architecture and Product Design. Other students have gained employment in related fields such as the Built Environment and furniture design.

Methods of assessment

Unit 1 – Portfolio of Creative skills assessed internally. 60% of AS grade.

Unit 2 – External assessment in June. 40% of AS grade.

Unit 3 – External assessment in June. 40% of A2 grade.

Unit 4 – Internal assessment in June. 60% of A2 grade.