(EDUQAS) A Level Design and Technology

Course Content

A Level Design and Technology offers a unique opportunity to identify and solve real problems by designing and making products or systems. It is an inspiring, rigorous, and practical subject that encourages creativity and imagination when applying iterative design processes to develop and modify designs. Students will design and make prototypes that solve real world problems, considering their own and others' needs, wants, aspirations and values.

Students are required to study all content in relation to one endorsed route, we have selected Product Design. This ensures they can make effective choices regarding which materials, components, and systems to utilise within design and make activities. The subject content is presented under seven main headings: designing and innovation; materials and components; processes; industrial and commercial practice; product analysis and systems; human responsibility; and public interaction including marketing and research.

Students will develop subject knowledge in design and technology, including how a product can be developed through the stages of prototyping, realisation, and commercial manufacture. They will learn to identify market needs and opportunities for new products, initiate, and develop design solutions, and make and test prototypes. Students will complete coursework alongside the theory throughout the two years of the course, culminating in a substantial design and make project based on a brief they develop themselves.

Design and Technology has many cross-curricular links with other disciplines, including Mathematics, Science, Art, and Business, allowing students to integrate and apply their understanding and knowledge from other subject areas. Students will develop skills in creative problem-solving, project management, critical analysis, and the practical application of technical knowledge.

Year 12

Half Term 1

Designing and innovation, introduction to iterative design processes, materials, and components (properties and characteristics)

Half Term 2

Materials and components (selection and application), processes (manufacturing techniques and methods)

Half Term 3

Processes (tools, equipment, and CAD/CAM), industrial and commercial practice (scales of production, quality control)

Half Term 4

Product analysis and systems, human responsibility (sustainability, environmental considerations, social and ethical factors)

Half Term 5

Public interaction – marketing and research, NEA project development begins (identifying contexts, investigation, and analysis)

Half Term 6

NEA project development continues (design brief, specification, initial design ideas), consolidation of Year 12 theory content

Year 13

Half Term 1

NEA project (design development, modelling, and prototyping), advanced materials and processes

Half Term 2

NEA project (manufacturing and making), industrial and commercial practice (enterprise, crowdfunding, virtual marketing)

Half Term 3

NEA project (testing, evaluation, and refinement), wider issues in design and technology

Half Term 4

NEA project completion and final submission, examination preparation, and practice questions

Half Term 5

Revision and practice exam questions, consolidation of technical principles and designing and making principles

Half Term 6

Final revision and examination period

Independent learning

Homework is set regularly and includes opportunities for independent research, revision, and skill development. Students are expected to dedicate significant time outside of lessons to their NEA project, which requires approximately 80 hours of work. Examples of independent learning activities include:

Research: Investigate a named designer or design movement and analyse how their work has influenced modern product design.

Skill: Produce annotated sketches exploring different design solutions for your NEA project brief.

Revise: Create revision cards covering the properties and uses of the main material categories in your endorsed route.

Assessment

Students complete regular written assessments that assess both knowledge and examination skills. This allows for misconceptions to be addressed and ensures all examination techniques are developed throughout the course. Students will undertake mock examinations at the end of Year 12 and during Year 13.

The A Level qualification consists of two components, each worth 50% of the final grade:

Component 1: Design and Technology in the 21st Century – Written examination (3 hours, 100 marks). The examination includes structured and extended writing questions assessing knowledge and understanding of technical principles and designing and making principles, along with the ability to analyse and evaluate wider issues in design and technology.

Component 2: A Sustained Design and Make Project – Non-exam assessment (approximately 80 hours, 100 marks). 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; and analyse and evaluate design decisions and outcomes.

Useful Websites and Reading Materials

https://www.eduqas.co.uk/qualifications/design-and-technology-as-a-level/

https://www.technologystudent.com/

https://www.bbc.co.uk/bitesize/subjects/zfr9wmn