ST JOSEPH'S INSTITUTION INTERNATIONAL SCHOOL
"Enter to Learn, Leave to Serve"

Sixth Form Subject Guide

DESIGN AND TECHNOLOGY

★★★ CAREERS RELATED TO STUDYING THIS SUBJECT

Studying A Level Design and Technology develops a blend of creative, analytical, and technical problem-solving skills. Students learn to identify and solve real-world problems through innovation and iterative design.

Design and Technology graduates find careers in a variety of fields such as product and industrial design, engineering, architecture, manufacturing, user experience (UX) design, project management, and education. Other pathways include furniture design, automotive design, civil and structural engineering, materials science, and sustainability consultancy.

Careers may include product designer, design engineer, architect, CAD technician, mechanical engineer, interior designer, materials technologist, or creative project manager.

★★★ A LEVEL COURSE CONTENT

The Cambridge International A Level Design and Technology syllabus encourages learners to explore design opportunities and develop solutions through critical thinking, creativity, and technical knowledge. Students will develop a broad understanding of materials, processes, innovation, and how design influences and is influenced by the world around us.

The course helps students to:

- Investigate and understand user needs and contexts.
- Apply iterative design processes to develop functional and aesthetic solutions.
- Communicate and evaluate design proposals effectively.
- Use modelling, sketching, CAD and physical prototyping to develop ideas.
- Consider sustainability, ethics, and economic factors in design.

★★★ A LEVEL METHODS OF ASSESSMENT

AS Level (Year 1)	%
Paper 1: Product Design (1 hour 15 mins) [60 marks] Structured questions on materials, processes, and design concepts.	50% (AS) 25% (A)
Paper 2: Design Project (Coursework) [50 marks] A practical project with a design folder and prototype outcome based on an identified need or problem.	50% (AS) 25% (A)

A Level (Year 2)	%
Paper 3: Product Design (1 hour 15 mins) [60 marks] Further knowledge of design theory, systems and control, and advanced processes.	25%
Paper 4: Extended Design Project (Coursework) [50 marks] A substantial design and make project addressing a real need. This includes a written design folder, evidence of testing, evaluation, and practical realisation.	25%

All components are externally assessed by Cambridge International.

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★★★ METHODS OF STUDY FOR A LEVEL

Students will engage in a wide range of practical, theoretical, and digital learning experiences. Lessons involve:

- Research and investigation into user-centred design problems
- Sketching, CAD modelling, prototyping and workshop-based making
- Written analysis and evaluations of materials, processes and outcomes
- Developing independence through project management and time planning
- Using both traditional and digital tools to communicate design ideas

Students are encouraged to take ownership of their projects, working iteratively to develop and refine their ideas over time.

★★★ THE SKILLS STUDENTS WILL DEVELOP

Skill Developments
Creative and analytical thinking
Research and user analysis
Technical drawing and communication
Safe and competent use of tools and machinery
Critical evaluation and reflection
Time and project management
Application of STEM knowledge in real-world contexts

★★★ ENTRY REQUIREMENTS FOR A–LEVEL

While not essential, it is recommended that students have taken IGCSE Design and Technology or a related creative/technical subject. A strong performance in Design and Technology, Science, or Art at KS3 is beneficial.

Students should:

- Demonstrate curiosity and commitment to solving design problems
- Be self-motivated and able to work independently
- Show a willingness to learn through experimentation and failure
- Be comfortable using tools and working with materials
- Be able to manage long-term projects and meet deadlines

Over the summer between Year 11 and Year 12, students will complete a short design research or modelling task to help prepare for the course. Students should expect to work outside of lesson time to develop and refine their coursework throughout the A Level.