



IB Design & Technology HL and SL

Design, and the resultant development of new technologies, has given rise to profound changes in society: transforming how we access and process information; how we adapt our environment; how we communicate with others; how we are able to solve problems; how we work and live. Design is the link between innovation and creativity, taking thoughts and exploring the possibilities and constraints associated with products or systems, allowing them to redefine and manage the generation of further thought through prototyping, experimentation and adaptation. It is human-centred and focuses on the needs, wants and limitations of the end user.

Competent design is within the reach of all. Through the practice and application of well-established design principles and methodologies, individuals can increase the likelihood that a design will be successful. These principles taken together make up what is known as the design cycle.

The designer is interested in not only the consumer / material environment but also the political social and economic considerations which affect people's priorities. This programme assumes no previous knowledge of design technology and is suitable for the scientist (particularly a physicist) or non-science specialist. The course utilises knowledge, skills and the design process within problem-solving contexts and uses local and readily available resources. The design cycle is at the core of the programme. The core is about designing and the role of designers. All students complete a design and manufacture based project lasting approx. 40hours for SL or 60 hours for HL.

Content

All students study the following topics as part of the IB core.

- Human Factors and ergonomics
- Resource management and sustainable production
- Modelling
- Raw material to final product
- Innovation and design
- Classic design

At Higher Level, students also study these additional topics.

- User-centred design
- Sustainability
- Innovation and markets
- Commercial production

Assessment

Standard Level

The external assessment at Standard Level consists of two written papers containing multiple choice, data based, short answer and extended response questions this totals 60% of the course weighting. The major project (approx. 40hrs) is internally assessed and externally moderated and is worth the remaining 40% of the course.

Higher Level

For Higher Level there are three written papers containing multiple choice, data based, short answer and extended response questions this totals 60% of the course weighting. The major project (approx. 60hrs) is internally assessed and externally moderated and is worth the remaining 40% of the course.



A Level Design & Technology

Exam Board: OCR

Design and technology is an inspiring, rigorous and practical subject. In formulating this specification, OCR has worked closely with representatives from higher education and industry professionals to ensure that the direction of the qualification fulfils the requirements that support progression. There has also been a focus on ensuring the content reflects authentic practice as best as it can within the school environment, giving an insight into the way that creative, engineering and/or manufacturing industries function. Learners are thus enabled to make the connection between the knowledge, understanding and skills they develop and how this will benefit them in the future:

- Be open to taking design risks, showing innovation and enterprise
- Develop intellectual curiosity about design and manufacture of products and systems
- Gain insight into the creative, engineering and/or manufacturing industries
- Develop the capacity to think creatively, innovatively and critically
- Utilise Information and Communication Technology (ICT) including CAD/CAM to enhance their design and technological capability
- Develop understanding of the iterative process
- Become empathetic and successful designers, considering global and local change and social implications

A Level Course Content

There is distinct content for the exam and non-exam assessment, but this is held together through nine topic areas that shape all components and give clarity, these are:

- Identifying requirements
 - Learning from existing products and practice
 - Implications of wider issues
 - Design thinking and communicating
 - Material considerations
- Technical understanding
 - Manufacturing processes and techniques
 - Viability of design solutions
 - Health and safety

A LEVEL DESIGN & TECHNOLOGY - PRODUCT DESIGN		
Principles of Product Design (01)	Problem Solving in Product Design (02)	Iterative Design Project (03,04)
Written Paper	Written Paper	Non-exam assessment
1 hour 30 minutes	1 hour 45 minutes	65 hours
80 marks	70 marks	100 marks
26.7% of total A Level	23.3% of total A Level	50% of total A Level

