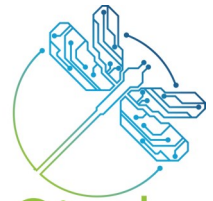


# DESIGN ENGINEERING – A Level



MendipSixth

“Design is a solution to a problem, art is a question to a problem.” *John Maeda*

## Overview

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

## Year 12

**Design Task:** students will design and make a product based on a brief developed by the student.

**Theory:** the characteristics and working properties of materials relevant to product design and manufacture, including metals, woods, polymers, textiles, composites, smart and modern materials. The application of smart and modern materials. Production processes including moulding, extrusion, laminating, milling, turning, casting, stamping, and forming; the use of ICT, prototyping, jigs and fixtures. the use of adhesives, permanent, and semi-permanent fixings.

## Year 13

**Design task:** Students will design and make a product based on a brief which is chosen from 8 design briefs which are given by the exam board.

**Theory:** industrial and commercial practice including manufacturing processes and systems, product manufacture and maintenance, production scales, and quality control in relation to manufacturing and the design industries. Modular/cell production systems, just-in-time manufacturing, bought-in parts and components and the use of standardised parts. Rapid prototyping.

## Assessment method

This A level is assessed over the course of two years. You will sit two written exams, one at the end of Year 12 and one at the end of Year 13. At the end of Year 12 your Design and Make Task will be assessed, and your Major Project will be assessed in Year 13. All pieces contribute to your final A level award.

## Additional information

In addition to homework you will also be expected to carry out a minimum of 5 hours independent study per fortnight in each subject studied. Independent study will include independent coursework towards your assessed assignments.

An electronic textbook will be supplied. You will also need drawing materials, sketch book and Product Design app. Depending on your own design solution you may also need to supply some design specific materials.

Trips will be arranged to Design Institutes.

## Entry requirements

Five GCSE Grade 4 to 9 including English and Maths. Students require a GCSE Grade 6 in Product Design or an equivalent course.

## For more information contact

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## Futures

Engineering, product design, architecture.

## Exam board

