6 FORM

Subject Information Sheet

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Advanced Level

ENGINEERING

Course Aims:

Learning about engineering design at A level strengthens learners' critical thinking and problem solving skills within a creative environment, enabling them to develop and make prototypes/products that solve real-world problems, considering their own and others' needs, wants, aspirations and values. This A Level qualification requires learners to identify market needs and opportunities for new products, initiate and develop design solutions, and make and test prototypes/products. Learners should acquire subject knowledge in engineering design, including how a product can be developed through the stages of prototyping, realisation and commercial manufacture.

Course Content and Assessment:

OCR's A Level in Design and Technology is a linear qualification with three endorsed titles, each of which consist of two components that are externally assessed and one component that is assessed by the centre and externally moderated by OCR.

- Principles of Design Engineering - 26.7%
- Problem Solving in Design Engineering - 23.3%
- Iterative Design Project - 50%

A Level Overview:

Practical Project Work - A range of practical activities, theory sessions and tutorials designed to equip learners for the two exams and their iterative design project. Students will develop the confidence to:

- identify, investigate and outline design possibilities
- design and make prototypes
- analyse and evaluate design decisions and wider issues in design and technology

Unit 1: Principles of Design Engineering
This paper is set out through four sets of questions that predominantly cover technical principles.

Unit 2: Problem Solving in Design Engineering
This component has a series of longer answer questions that require learners to demonstrate their problem solving and critical evaluation skills.

Unit 3/4 Iterative Design & Make Project
The 'Iterative Design Project' requires learners to initiate, develop and make a prototype(s) through iterations of exploring, creating and evaluating that identify opportunities and constantly respond to stakeholder needs, wants and interests. This process should be followed and evidenced to demonstrate an accurate account of their progress.

Learning Methods:

Learners will be encouraged to:

- Be open to taking design risks, showing innovation and enterprise whilst considering their role as responsible designers and citizens.
- Work collaboratively to develop and refine their ideas.
- Gain an insight into the creative, engineering and/or manufacturing industries.
- Develop the capacity to think creatively, innovatively and critically through focussed research.

Career Opportunities:

This course is good preparation for students intending to study Engineering at University or through an apprenticeship after sixth form. Examples of degree courses can include:
General Engineering, Civil Engineering, Mechanical Engineering, Aerospace, Biotechnology, the list is endless.

Entry Requirements:

- Grade 4 or above in English.
- Grade 6 or above in Maths.
- Grade 5 or above in Art or Design Technology would be advantageous.

Staff Contacts

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Web Link Address
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