Subject: Engineering – KS4

Head of Dept/Faculty: Mrs K Phillips

Qualification: Level 1/2 Cambridge National Certificate in Engineering Design	Exam Board: OCR	Exam/NEA Split: 25% Exam 75% Centre Assessed Tasks

R105: Design briefs, design specifications and user requirements Written paper, OCR-set and marked 25% 1 Hour	**R106: Product analysis and research** Centre-assessed task, OCR moderated 25% 10-12 Hours	**R107: Developing and presenting engineering designs** Centre-assessed tasks, OCR moderated 25% 10-12 Hours	**R108: 3D design realisation** Centre-assessed tasks, OCR moderated 25% 10-12 Hours

Course overview

The OCR Level 1/2 Cambridge National Certificate in Engineering Design consists of four mandatory units, it requires 120 GLH in total.

R105: Design briefs, design specifications and user requirements

Students explore the requirements of design briefs and specifications for the development of new products and how consumer requirements and market opportunities inform these briefs. They develop their understanding of the design cycle, the requirements for a design brief and design specification, and the importance of research data in developing a design solution.

R106: Product analysis and research

Students find out how to perform effective product analysis through both research and practical experience of product assembly and disassembly procedures. This helps them develop skills in critical analysis and an understanding and appreciation of manufacturing processes, design features, materials used and the principles behind good design.

R107: Developing and presenting engineering designs

Students develop their knowledge and skills in communicating 2D and 3D design ideas, including effective annotation and labelling. They use detailed hand rendering as well as computer-based presentation techniques and computer-aided design (CAD) software.

R108: 3D design realisation

Students produce a model prototype and test design ideas in a practical context. They evaluate the prototype against the product specification and consider potential improvements to features, function, materials, aesthetics and ergonomics in the final product.

How will you be assessed?

The course is graded in Pass, Merit, Distinction, Distinction* grades.
The course is a level 2 which is equivalent to GCSE Grades A*-C.

Career progression

Engineering contains a large number of job opportunities and specialties. Here is a list of sectors you may wish to consider: Aerospace Engineer, Agricultural Engineer, Automotive Engineer, Biomedical Engineer, Chemical Engineer, Civil Engineer, Computer Engineer, Drafting and Design Engineer, Electrical Engineer, Environmental Engineer, Geological Engineer, Marine Engineer, Mechanical Engineer, Petroleum Engineer, Software Engineer.