



The Arts, PE & Technology Faculty

Engineering Design

Subject Intent:

The Cambridge National in Engineering Design helps students understand the processes of engineering design and how market requirements inform client briefs. Through practical activities they develop skills in computer modelling and model making and how to communicate design ideas effectively.

Course Overview:

OCR Cambridge Nationals: Engineering Design Level 2

The course challenges students to create an extensive selection of coursework, segmented into 4 individual sections which are as follows:

- R105 (1 hr Exam Element) - Design briefs, specifications, and user requirements
- R106 (NEA Part 1) – Product Analysis and Research
- R107 (NEA Part 2) – Developing and presenting Engineering Designs

Course Detail:

A list the key content students will cover, broken down into these headings

Engineering Design is a process used to identify market opportunities and solve problems which contribute to the development of new products and systems. This qualification is aimed at learners who wish to study the processes involved in designing new engineered products and the requirements of a design specification. Through research and practical activities, learners will understand how market requirements and opportunities inform client briefs and will use practical skills such as drawing, computer modelling and model making to communicate design ideas.

The Cambridge Nationals in Engineering Design encourage learners to communicate and consult with a client to develop a viable and innovative product. Learners will apply practical skills to produce a prototype in the form of a model and test design ideas to inform further product development. Through reflection, learners evaluate the prototype, making a comparable outcome against specification points and assess possible, practical solutions and improvements to their prototype design.

A practical approach to teaching and learning will provide learners with knowledge in engineering technology and develop their critical thinking, creativity and dextrous skills through engaging practical experiences.

This qualification can be delivered separately or as part of an engineering curriculum providing useful contextualisation alongside other Cambridge Nationals in Engineering and GCSE Design and Technology subjects. Centres with access to engineering equipment such as CAD and CNC will benefit from offering this qualification in association with OCR Cambridge Nationals in Engineering Manufacture. This specification contains OCR's Cambridge National Award/Certificate in Engineering Design.

Useful links

<https://www.ocr.org.uk/Images/150704-specification.pdf>