

# Design Engineering

## Cambridge Nationals Level 1/2

Examination Board: OCR

### What will I study?

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.

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

### How is the course assessed?

**Component 1:** Unit 1 (25% of the qualification) 1 hour written paper

#### ***Design briefs, design specifications and user requirements.***

This unit provides the opportunity for learners to develop their understanding of the requirements of design briefs and design specifications for the development of new products. Through research and practical activities, learners will understand how consumer requirements and market opportunities inform design briefs.

**Component 2:** Unit 2 (25% of the qualification)

#### ***Product Analysis and research.***

This unit will enable learners to perform effective product analysis. They will research existing solutions and assess the development of engineered products. Learners will develop skills and gain practical experience of product assembly and disassembly to appreciate manufacturing processes, design features and materials used.

**Component 3:** Unit 2 (25% of the qualification)

#### ***Developing and presenting engineering designs.***

This unit develops techniques in generation, concept development and the communication of design ideas using hand rendering and computer-based presentation techniques including CAD (computer aided design) software.

**Component 4:** Unit 2 (25% of the qualification)

#### ***3D design realisation.***

This unit requires learners to apply practical skills to produce a prototype product or model using craft-based modelling materials alongside computer-controlled or rapid-prototyping processes. Learners will produce a prototype product in the form of a model and test design ideas in a practical context, to inform further development utilising more complex production processes.

### How will the course help me in the future?

The course prepares learners for further studies in Engineering and Manufacturing. Learners can also secure apprenticeships in industry using this as a good gateway to securing their first placement.

### Which member of staff should I contact for more information?

Mr Ryan