

# Engineering

## What will I learn?

Advanced manufacturing is at the heart of the growth economy and WJEC engineering is a great foundation for learning in this area. The area of advanced engineering is one in which there are many opportunities for career progression via university or technical college. Course structure:

**Unit 1 engineering design:** In this unit, you will learn about that design process. You will learn how to analyse a product so you can see what features make it work and how it meets certain requirements. You will learn how to take ideas from different products in order to produce a design specification for a product. You will redesign the product using CAD.

**Unit 2 producing engineering products:** Through this unit, you will learn to interpret different types of engineering information in order to plan how to make engineered products. You will develop the skills needed to work safely with a range of engineering processes, equipment and tools. With these skills, you will learn to make a range of engineered products that are fit for purpose.

**Unit 3 solving engineering problems:** Problem solving is critical to working in engineering. In this unit you will learn about how engineers in the past have found solutions to problems and how other engineers use their ideas to solve problems today. You will learn about materials, processes and maths that engineers use and how they are used to solve problems. In solving problems, you will learn to follow a process and develop drawing skills to communicate your solutions.

## What skills do I need?

You will need to be able to:

- Work safely and independently.
- Develop accurate working products using a range of processes.
- Use Computer Aided Design.
- Analyse existing products, develop specifications and design ideas.

## Assessment

### Examination

- Unit 3: Solving engineering problems | 1 hour 30 mins | 25%

### Non-examined assessment

- Unit 1: Engineering design | 30 guided learning hours | 25%
- Unit 2: Producing engineering products | 60 guided learning hours | 50%

## Could lead to:

The UK engineering industry is vast, with more than 6,000 organisations employing around 800,000 engineers. Career opportunities exist across a broad spectrum of sectors, from aerospace and defence to renewable energy and transportation and many of these sectors have a shortage of qualified engineers.