

# Cambridge Technical Extended Certificate

# ENGINEERING

The Cambridge Tech L3 in Engineering develops learners' knowledge and understanding of the mathematical and physical concepts which underpin the skills need to solve a range of engineering problems. This course is ideal for students interested going on to study degrees within the many fields of Engineering at University and completion of this course also supports the application to a Higher apprenticeship with an engineering company should you choose a more vocational progression following college. It is also a course which complements 'A' levels such as Maths and Physics, supporting continued study within these fields too.

## Specific course entry requirements

College entry including GCSE Mathematics minimum Grade 6 and either GCSE Science 6,6 or GCSE Physics 6 or above.

## How will I be assessed?

- Coursework 40%
- Examination 60%

The course is a combination of 4 external exams and 2 vocational style coursework units.

## What will I study?

There are 4 examined units across the two years in which you develop the fundamental knowledge and tools of an engineer:

- Mathematics for engineering -this includes algebra, use of geometry and graphs, exponentials and logarithms, calculus, trigonometry statistics – all applied in the context of engineering problems.
- Science for engineering – you will gain an understanding of the fundamental scientific principles of electrical and electronic engineering, properties of materials, principles of fluid mechanics and basic principles of thermal physics.

- Principles of mechanical engineering – you will develop an understanding of systems of forces and types of loading on mechanical components, the fundamental geometric properties relevant, levers, pulleys and gearing, the properties of beams and the principles of dynamic systems.
- Principles of electrical and electronic engineering – you will develop an understanding of fundamental electrical principles, alternating voltage and current, electric motors and generators, power supplies and power system protection, analogue electronics and digital electronics

In addition to these examined units you will undertake two coursework units which enable you to develop other skills desired by both universities and employers including critical thinking, problem solving, and creative thinking.