

Mix it up Engineering

This course is modular based and will allow you to explore new and existing technologies with a mixture of theoretical and practical skills to enhance your learning experience. You will study how maths and physics relate to engineering, alongside the theory of mechanical and electronic engineering.

Entry requirements

5 GCSE at grade 5 or above including English Language and maths

Traditionally, these are the main branches of engineering, with hundreds of specialities and sub-categories.

- Mechanical engineering
- Electrical engineering
- Manufacturing engineering
- Chemical engineering



This qualification is equivalent to one A level when studied across the two years (Extended Certificate). It is recommended that you study A Level Maths or Physics alongside this qualification if you are planning on progressing into something related to Engineering after college.

Content to be studied includes:

Mathematics for Engineering (exam)

- algebra relevant to engineering problems
- the use of geometry and graphs in the context of engineering problems
- exponentials and logarithms related to engineering problems
- the use of trigonometry in the context of engineering problems
- calculus relevant to engineering problems
- how statistics and probability are applied in the context of engineering problems

Science for Engineering (exam)

- understand applications of SI units and measurement
- understand fundamental scientific principles of mechanical engineering
- understand fundamental scientific principles of electrical and electronic engineering
- understand properties of materials
- know the basic principles of fluid mechanics
- know the basic principles of thermal physics

Principles of Mechanical Engineering (exam)

- systems of forces and types of loading on mechanical components
- the fundamental geometric properties relevant to mechanical engineering
- levers, pulleys and gearing
- the properties of beams
- the principles of dynamic systems

Principles of Electrical and Electronic Engineering (exam)

- fundamental electrical principles
- alternating voltage and current
- electric motors and generators
- power supplies and system protection
- analogue electronics
- digital electronics

