

# Engineering Key Stage 4

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## Course Description

### **Course Aim:**

This course is for those interested in learning about modern engineering technologies and their applications in the real world. Based on established mechanical study programmes, the course will develop knowledge, understanding and skills across a wide range of engineering subjects.

The **BTEC level 2** qualification in **Engineering** can help you take your first steps towards a career designing and building structures and machinery. You'll learn essential skills such as using programming coding, electrical and mechanical science, technical engineering drawing, maintenance, health and safety within a working environment and manufacturing working circuits and products.

### **Entry Requirements:**

Students wishing to follow this course should have an interest in Engineering, Technology, Design and Science. As there is no final exam as in most GCSE subjects, grades are based on units completed throughout year 10 and year 11. This means work you do at the start of year 10 is just as important work you do at the end of year 11. For this reason, students who successfully enrol on the course should be able to produce high quality work to set deadlines.

### **Learning Support Req.:**

All students will be provided with the support required to develop the skills needed to investigate and manufacture engineered products. Access to a home computer to complete assignment briefs would be useful.

### **Opportunities (Work Related/Links):**

Students may have the opportunity to visit engineering companies as part of the course and may wish to arrange their own engineering related placement as part of the year 10 work experience week.

### **Progression Routes:**

Students wishing to follow a career path in the Mechanical Engineering, Electrical Engineering, Civil Engineering and Aerospace Engineering would be suitable candidates for this course. Many other engineering sector pathways are possible upon completion of the course.

**Careers:** If you want to be at the forefront of engineering, just a few examples of exciting roles to consider in the engineering sector are:

**Aerospace Engineer:** Aerospace engineering is the study of the design, development, and production of air and spacecraft.

**Automotive Engineer:** Automotive engineers research, design and develop vehicles and their subsystems.

**Biomedical Engineer:** Biomedical engineers work with a combination of biology, medicine and engineering. They are behind equipment like MRIs and microscopic surgical machines as well as medical innovations like artificial organs and prosthesis.

**Civil Engineer:** Civil engineers specialize in road, bridge and buildings design and construction.

**Electrical Engineer:** Electrical engineers design, develop, test and supervise electrical equipment manufacturing.

**Marine Engineer:** Marine Engineers are responsible for the design and construction of seagoing vessels and structures, focusing primarily on their internal systems.

**Mechanical Engineer:** Mechanical engineering is the study of motion, energy and force to develop mechanical solutions that help satisfy the needs and wants of society. Physics and Mathematics go well with this sector of engineering.