

Engineering (BTEC)

What will I learn about?

The aim of the Engineering course is to:

- inspire and enthuse learners to consider a career in the Engineering sector;
- give learners the opportunity to gain broad knowledge and understanding of, and develop skills in, the Engineering sector.

BTECs are vocationally-related qualifications, where learners develop knowledge and understanding by applying their learning and skills in a work-related context.

How is the course structured?

The students will complete 3 units on Engineering course over the 2 years. Alongside this they will have dedicated sessions and projects that develop their skills on the different engineering equipment in our state of the art engineering workshop and our range of fabrication equipment.

Unit 1: The Engineered World: This unit provides an introduction to the underpinning knowledge and understanding in the world of engineering. It covers engineering processes, developments in engineering materials and technologies and how engineering contributes to a sustainable future.

Unit 2: Investigating an Engineered Product: This unit looks at how a designer's ideas get transformed into a finished article that's fit for purpose. Learners will investigate the form of the product, the function it must fulfil, its performance characteristics and what materials will be most effective in its manufacture. This unit requires learners to bring together their knowledge, skills and understanding gained from other units of study. Learners will then plan, carry out and reflect on their project, using and developing key skills such as independent investigation and research skills and techniques, data collection, data processing and analysis.

Unit 7: Machining Techniques: The machines that you will use as part of this unit are some

of the most important pieces of engineering equipment. Most modern Computer Numerically Controlled (CNC) machine tools have been developed from conventional lathes, milling machines and drills. This unit will help you to understand the engineering processes that we use to generate and form shapes through machining techniques. You will learn how to select, investigate and use machining techniques that involve shaping or forming with loss of volume. You will also use work-holding devices and a range of tools so that you can carry out a variety of machining processes. You will learn how to set the machines before you use them and how to monitor the machines while you are using them. You will also learn how to inspect the items you produce for compliance and accuracy.

How will my work be assessed?

Students will have to complete 3 units over the 2 years.

- Unit 1 – The Engineered World is theory based, which covers knowledge on Engineering sectors, materials, sustainability, and manufacturing processes. Students will then sit one externally assessed exam.
- Units 2 and 7 are project based. Students will have to apply their knowledge and skills learnt and complete coursework that will be internally assessed.

What can this qualification lead to?

During this GCSE you will have the opportunity to visit industries and businesses which will provide you with practical experience relevant to getting a job. Many students who complete this qualification go on to take higher-level courses in engineering and go onto advanced, degree apprenticeships with our employer partners .