

Engineering

BTEC Level 3 Extended Certificate

Equivalent to one A Level



Overview

Engineering is not all about oily rags and lathes. It is a high technology area with many exciting opportunities. At the moment the UK faces a chronic shortage of people with engineering skills and knowledge. This course provides students with an entry point to becoming a professional Engineer.

The qualification is designed for 16 to 19 year-old learners in full-time education who are interested in pursuing a career in Engineering and who are interested in engineering technology. It is the equivalent of one A Level and must be taken in both the Lower and Upper Sixth.

The course could lead to further study in Engineering, or an Engineering related apprenticeship or related employment.

Progression

This qualification is recognised by leading engineering businesses and universities such as Cisco Systems, the Engineering Council, Network Rail, Nottingham Trent University, Parafix, Royal Academy of Engineering, the University of Exeter and the University of Northampton.

In addition, this qualification has been approved by the engineering professional bodies on behalf of the Engineering Council as contributing to the requirements for professional registration as an Engineering Technician (EngTech).

The professional bodies include The Institution of Engineering and Technology (IET), The Institution of Mechanical Engineers (IMechE) and The Society of Operations Engineers (SOE).

Progression could follow one of three routes:

- Employment in Level 3 job roles,
- Higher apprenticeship programmes or
- Higher education courses in engineering

What goes well with this course?

- Mathematics
- Physics
- Computer Science
- Product Design (3D Design)

Course Content

Students will:

- Apply mathematical and physical science principles to solve electrical, electronic and mechanical-based engineering problems
- Explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely
- Explore engineering product design and manufacturing processes – involving the completion of activities that consider function, sustainability, materials, form and other factors
- Develop two-dimensional (2D) detailed drawings and three-dimensional (3D) models using a computer-aided design (CAD) system

Educational Experiences

Course Specific Trips, Visits & Experiences

The course will include visits to employers and talks at Reigate College by visiting speakers. Some of the assessment tasks may be set by employers. The students will attend a trip to the Mini factory in Oxfordshire to review how vehicles are

mass produced using computer aided manufacturing.

Work Experience

All students need to gain an experience of the work place during their time at College and for students studying vocational courses it should ideally be linked to one of their subject areas.

Assessment

There are four units taken across two years.

In Year One the assessments will include:

- Engineering Principles: external examination
- Delivery of Engineering Processes Safely as a Team: internally assessed

In Year Two the assessments will include:

- Engineering Product Design and Manufacture: externally set and marked assignment
- Computer Aided Design in Engineering: internally assessed

The exam board for this course is Pearson BTEC.

Entry Requirements

All students need to have at least five GCSEs at Grade 4 or above (and a satisfactory school reference) in order to be accepted on a Level 3 programme.

In addition, students should meet the following minimum GCSE requirements:

- Grade 6 in Maths

The course will suit students who enjoy finding out how things work and have an enquiring, mathematical, practical mind.