



➤ Introduction

At the moment the UK faces a chronic shortage of people with engineering skills and knowledge. Engineers have the biggest impact on the world over any other profession; they work to come up with solutions to global warming, machines for diagnosing serious medical conditions, and better transport systems that we use every day. If you want to make a difference in the world, engineering is for you. This course provides students with an entry point to becoming a professional Engineer.

The course has been designed to enable learners to develop a substantial common core of knowledge in the first year, including Health and Safety in the Engineering Workplace, Engineering Principles, Product Design & Manufacture, Electrical Machines and Computer Aided Design.

➤ What will I learn?

Unit 1: Engineering Principles – externally assessed. This unit will develop your mathematical and physical scientific knowledge and understanding to enable you to solve problems set in an engineering context.

Unit 2: Delivery of Engineering Processes Safely as a Team – internally assessed. In this unit, you will examine common engineering processes, including health and safety legislation, regulations that apply to these processes and how individual and team performance can be affected by human factors.

Unit 3: Engineering Product Design and Manufacture – externally assessed. In this unit, you will examine what triggers changes in the design of engineering products and the typical challenges that engineers face, such as designing out safety risks. You will learn how material properties and manufacturing processes impact on the design of an engineering product.

Unit 41 (TBC): Manufacturing Secondary Machining Processes – In this unit, you will cover the technology used in, and characteristics of, a range of traditional machining processes such as turning, and specialist machining processes.

➤ How will I be assessed?

| Component | Type |
|--|----------------------------|
| Unit 1: Engineering Principles | Exam |
| Unit 2: Delivery of Engineering Processes Safely as a Team | NEA - Internally Assessed |
| Unit 3: Engineering Product Design and Manufacture | Controlled Assessment Task |
| Unit 41 (TBC): Manufacturing Secondary Machining Processes | NEA - Internally Assessed |

➤ Opportunities

These could include: • visits to local engineering companies; • visits to the Design, V&A and Science Museums; • study days at supporting universities

➤ Other subjects?

There are several combinations that work well. There is Maths, BTEC IT and A Level Physics; Also Creative subjects including Art and Design or other subjects including BTEC Science and Economics.

➤ Future Careers

Progression from this qualification is either to an employer or further or higher education for engineering sector courses such as degrees in Engineering, Electronics Engineering, Computer Science or Mathematics. This qualification also supports progression to job and apprenticeship opportunities in the engineering sector. Jobs that are available in these areas include: • aerospace engineer • automotive engineer • contracting civil engineer • control and instrumentation engineer • maintenance engineer • mechanical engineer • nuclear engineer

➤ Course Information

Course Code - 610/3962/

Examination Board - Pearson Edexcel