

Statement of Purpose

601/3319/3 – Pearson BTEC Level 1/Level 2 First Award in Engineering Materials and Manufacturing

Who is the qualification for?

This qualification is a Technical Award equivalent in size to one GCSE designed in partnership with the Royal Academy of Engineering. It is aimed at pre-16 students working at level 2 who want to include a study of Engineering, with a particular focus on materials and manufacturing, as part of their broader Key Stage 4 curriculum. When taken as part of a balanced curriculum, there is a clear progression route to a level 3 academic or vocational qualification or an apprenticeship for those who want to take study of this subject further.

What will the student study as part of this qualification?

This qualification includes four units that form the fundamental knowledge and understanding of the engineering materials and manufacturing sector.

Engineering Maintenance – This unit introduces students to engineering maintenance, including the different strategies that organisations use when maintaining their plant and equipment.

Materials Used in Engineered Products – This unit will develop students' understanding of material properties and characteristics, as well as the applications of a range of common materials they may encounter in engineering.

Production Planning for Engineering – This unit aims to give students a broad knowledge and experience of production planning. It enables students to appreciate the fundamental requirements of selecting appropriate manufacturing processes. It will give students an understanding of a product specification and a production plan and some of the information generated from them.

Program and Use a Computer Numerical Control (CNC) Machine – This unit provides students with an introduction to CNC programming and they will get to understand the different instructions and techniques that can be used to develop a program.

What knowledge and skills will the student develop as part of this qualification and how might these be of use and value in further studies?

The subject-specific knowledge and skills outlined above and developed in studying this qualification will aid progression to further study of Engineering, particularly a course which included materials and manufacturing at Level 3 and give some initial preparation for entering the workplace in due course.

This BTEC First qualification also provides further opportunity to enhance and reinforce transferable skills in English through extended writing and mathematics with elements of physics in naturally occurring, relevant, work-related contexts. Communication skills are developed through presentations and in discussions where students have the opportunity to express their opinions.

Which subjects will complement this course?

This qualification is designed to be taken as part of a broad and balanced curriculum at Key Stage 4. It is expected that students will take this qualification alongside GCSEs in EBacc

subjects, as well as possibly two non-core GCSEs such as Design and Technology and business and/or other Key Stage 4 vocational qualifications in business and computing.

What are the benefits of this qualification to students?

The engineering sector offers huge potential for learners interested in the subject. The UK is currently regarded as a world leader in sectors including renewable energy, space, low carbon, aerospace, creative industries, utilities, automotive, agri-food and bioscience. Engineers are fundamentally problem solvers. Their work influences our daily lives from making a telephone call, riding a mountain bike, flying in a plane, walking across a bridge and even wearing perfume or aftershave. They solve scientific and practical problems which affect all aspects of our lives underpinning economic activity and quality of life.

There are two suites of BTEC First Awards in engineering to choose from – the Level 1/ level 2 First Award in Engineering, and the three endorsed titles that make up the suite of engineering qualifications developed to replace the level 2 Principal Learning qualification.

This qualification is part of the suite developed in partnership with the Royal Academy of Engineering to replace the Principal Learning qualification in the Higher Diploma. Each of the three qualifications in this suite provides an opportunity to look in more detail at a different aspect of engineering than is possible in the standalone BTEC Level 1/Level 2 First Award in Engineering.

The Level 1/Level 2 First Award in Engineering Materials and Manufacturing allows students to focus on a particular aspect of the engineering sector, either individually as part of a broad learning programme, or in combination with other engineering qualifications.

This qualification focuses on materials and manufacturing engineering, while the other two qualifications in the suite cover design and product investigation, and electronics and computer control technologies.

Further information

Further information on the qualification can be accessed at <http://www.edexcel.com/quals/firsts2012/engineering/specialist-BTECs/Pages/eng-materials-manufacturing.aspx>.