

Sixth Form Subject Information

Engineering



Qualification	BTEC	
Exam Board	Pearsons	
Course Leader	H Ismail MEng (hons) ACGI PGCE	
Course summary	<p>BTEC Engineering is directly applicable, practical and challenging course. This course provides level 3 skills that form the basis of an engineering career. This course will provide enhanced progress in an engineering career or further education and provides a unique introduction into a broad and exciting sector full with local, national and global opportunities.</p> <p>Designed to support entry into the field of engineering and higher education, the course contains many elements that are common across engineering field and that dovetail with existing courses in higher education.</p> <p>Delivered in 4 units over 2 years the BTEC level 3 National Extended Certificate in Engineering (equivalent to 1 A Level) provides a practical entry into the field of applied engineering.</p> <p>Aims of the Course –</p> <ul style="list-style-type: none"> • Enhance entry into Engineering employment and higher education (BSc, BEng, MSc, MEng) • Introduction to the Engineering sector • Deliver practical knowledge of engineering • Transforming ideas and materials into functional products and systems • Instil principles of good engineering design and safety • Provide key CAD/CAM, advanced mathematics, engineering drawing, design team work and product specification skills. • Develop future engineers to deliver innovation, safety and efficiency <p>BTEC Nationals have always required applied learning that brings together knowledge and understanding (the cognitive domain) with practical and technical skills (the psychomotor domain). This is achieved through learners performing vocational tasks that encourage the development of appropriate vocational behaviours and transferable skills. Transferable skills are those such as communication, teamwork, research and analysis, which are valued in both higher education and the workplace.</p> <p>Delivery will be made through the combination of three faculties (Maths, Science and Design) to provide the learners with the best possible teaching of each unit of work.</p>	
What will students learn?	Year 1 content	<p>Unit 1: Engineering Principles (Externally assessed)</p> <p>Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems.</p> <p>The unit will be assessed through one paper of 80 marks lasting two hours that will be set and marked by Pearson.</p>

		<p>Unit 2: Delivery of Engineering Processes Safely as a Team (Internally assessed) Learners explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely.</p> <p>There is a maximum number of three summative assignments for this unit.</p>
	<p>Year 2 content</p>	<p>Unit 3: Engineering Product Design and Manufacture (Externally assessed) Learners will explore engineering product design and manufacturing processes and will complete activities that consider function, sustainability, materials, form and other factors. This unit is assessed by a set task of 60 marks provided by Pearson and completed under supervised conditions. Learners will be given a case study two weeks before a supervised assessment period, to carry out three hours of independent preparatory research.</p> <p>Unit 19: Electronic Devices and Circuits (Internally assessed) Learners explore the operation of electronic devices and their uses in circuits through simulation and practical exercises to build and test physical analogue and digital circuits.</p> <p>There is a maximum number of three summative assignments for this unit.</p>
<p>How will students be assessed?</p>		<p>Equivalent in size to one A Level. 4 units, 2 are external. External assessment (67%).</p> <p>Qualifications in the suite are graded using a scale of P (Pass) to D*(Distinction). The relationship between qualification grading scales and unit grades will be subject to regular review. The course contains a mixture of internal and external assessment, coursework and examinations. See unit descriptions for details of assessment for each unit.</p>
<p>Differentiation</p>		<p>The content provides a balance of breadth and depth, while retaining a degree of choice for individual learners to study content relevant to their own interests and progression choices. Also, the content will be applied during delivery in a way that is relevant to local employment needs. 360 Guided Learning Hours (465 Total Qualification Time) completed over two years</p> <p>Work on projects and assessments will be supported and guided by the teacher as you progress.</p>
<p>Resources</p>		<p>Engineering mathematics K. A. Stroud Access to internet for independent research Access to Design facilities, materials and tools Access to CAD/CAM packages where required Access to 3D printer</p>