



Engineering Faculty Curriculum Overview

"Scientists investigate that which already is, Engineers create that which has never been" – Albert Einstein

Intent for Engineering

The study of Engineering at Biddick Academy is as an important part of our students' education in which scientific knowledge and mathematics is used and experimented with to develop ways that benefit mankind, making it extremely important to society. Engineering encompasses a whole range of industries that could include on-site, practical construction work as well as evaluating safety systems from an office. The ability to use knowledge in order to make things work and solve problems, whether this be with transport, medicine, entertainment, space or the environment is a lifelong skill for education and employment, both in this country, and throughout the world. In fact, engineering is behind everything: mobile phones; make-up; cars; computers, shoes and even cutlery! It's all down to engineers.

Engineering is very closely linked to technology, and the rise of it, which is why it has played a huge part in technological advances including computers, hospital machines, the internet and more. Healthcare has also improved dramatically thanks to advancements in medical technology thanks to engineers. The improvement of medical technology has meant that the discovery of illnesses and treatment has helped to save and improve the lives of many people.

Engineering develops creativity amongst our students, together with the understanding of being accurate and precise. It also develops problem-solving skills that are necessary for many roles in society, and it is necessary that our students can compete successfully when searching for employment. Learning Engineering will allow students to potentially have access to a vast network of international opportunities in a wide variety of settings. New engineering jobs are constantly appearing alongside new and innovative technologies. Though it's easy to overlook the sheer amount of work that engineers do, it is inevitable to understand that there is more to engineering than is first thought.

The Implementation of the Engineering Curriculum

Engineering is taught by specialist teachers. Staff have worked with a number of local engineering companies to ensure that the course on offer will 'open doors' to our students in future. The faculty offers both the Cambridge National Course which is equally divided into four units. The deliberate design and sequencing of knowledge and skills is followed by all teachers so that there is a strong connectivity of knowledge for students. The course also ensures that students are able to demonstrate their skills and knowledge through both practical and theoretical settings. The ability for the faculty to offer practical work with state-of-the-art industrial machinery ensures that students are familiar with industry based equipment and provides them with an advantage when looking for a position in this industry.

Teachers in the faculty create a positive and engaging climate for learning, set high expectations both in terms of behaviour and academic achievement, demonstrate good knowledge of the Engineering curriculum, plan and deliver well-structured lessons. They present subject matter clearly using their professional expertise, assess understanding and address misconceptions systematically, responding to the strengths and needs of all students.

The Impact of the Engineering Curriculum

Students in the faculty develop a detailed knowledge of and master the skills within engineering and subsequently make excellent progress, achieve well and are ready and prepared for the next stage of their lives within education, employment or training. We believe that through the successful implementation of our faculty vision, our students will benefit:

- By attaining a variety of transferable life skills such as problem-solving, logical thinking, resilience and independence.
- Through the skills and knowledge of using high end industrial equipment.
- From a broader range and higher future level of further education, training, employment and career opportunities.
- By being able to use and apply their mathematical, scientific skills and knowledge in a practical environment effectively in whichever job, profession and career they decide to pursue upon conclusion of their education.
- By being able to apply their knowledge, skills and strategies to real-life situations and professional contexts.