OCR Level 1/2 Cambridge National Certificate in Engineering Manufacture

Our Engineering students develop an understanding of the processes involved in transferring a design concept into a product. They apply their knowledge and skills by operating manufacturing equipment following a design specification, using tools such as CAD/CAM.

The subject is delivered using a practical approach to teaching and learning, and will provide learners with knowledge in engineering technology, develop critical thinking, creativity and dextrous skills through engaging practical experiences.

Pupils opting to study this course must appreciate that whilst there is a significant proportion of practical work a substantial amount of research, theory and the detailed writing up of assignments are essential!

Extra-curricular activities and visits (KS4):
As well as our exciting curriculum, as a school we like our pupils to get involved in external competitions and challenges. This is a great opportunity for pupils who need to be stretched and challenged but also opportunity for those with an interest in technology. Activities include:

Experience of Workplaces – with links with local business such as Leyland Trucks, where possible we try to incorporate visits to the workplace which tie in with our units of work. It provides pupils with real life examples of topics such as health and safety, quality control and engineering processes and practices.

Visits to college/university – Where possible, we try to allow our pupils to gain experience of engineering related courses which could be pursued upon leaving school. It often provides alternative approaches to teaching and also an insight into alternative machinery and tools which may be used.

Facilities:

Recent renovations mean that our pupils have access to three state of the art workshops. Whilst all workshops serve as multifunctional classrooms each has a specific focus; resistant materials, engineering and electronics.

Pupils are given the opportunity to use a range of specialist machinery including:

- Laser cutters that will cut a variety of materials (wood, metal, glass, fabric, card, board)
- Lathes
- Wood turning lathe
- Vacuum formers
- CNC Machine
- 3D Printers

Pupils will also be given the opportunity to develop skills in a range of CAD and CAM software.

Assessment:

Unit Title	How it is assessed
Mandatory Units	
R109: *Engineering materials, processes and production*	**How** - Written theory examination **Duration** - 1 hour **Total Marks Available** - 60
R110: *Preparing and planning for manufacture*	**How -** Centre assessed task which is OCR moderated **Duration** - Approx 10-12 hours **Total Marks Available -** 60 marks
R111: *Computer aided manufacturing*	**How -** Centre assessed task which is OCR moderated **Duration** - Approx 10-12 hours **Total Marks Available -** 60 marks
R112: *Quality control of engineered products*	**How -** Centre assessed task which is OCR moderated **Duration** - Approx 10-12 hours **Total Marks Available -** 60 marks