

ENGINEERING

QEGS ENGINEERING WORKSHOP PROGRAMME

Course Length: Studied over one year (90hrs)

Course Leader: Mr M Kershaw (Kershaw@queenelizabeths.derbyshire.sch.uk)

Why study this Engineering Workshop Programme?

Our own in-house Engineering Workshop Programme will allow exposure to a variety of technical areas and skill sets used on a typical shop floor engineering environment. You will become competent in workshop practice including marking out, sheet metal fabrication, MIG welding, CNC, CAD design and secondary machining such as lathe work and milling machine operation. This programme has been introduced to act upon feedback from Industry experts to address some of the key skill sets missing from applicants entering into Engineering as a profession from further education. This course is a pure vocational one without any assessment or academic qualification. It provides willing and motivated learners the opportunity to learn a range of skill sets whilst also providing an escape from the pressures of academic work.

Where can this Programme take me?

Your completed Programme gives you the relevant skill sets to support an engineering apprenticeship application. The Workshop Programme also provides you workshop skills and experience to support your Engineering degree as it is now common practice for degree courses to not include any workshop practice in the subject. This is a major concern as students miss out on vital 'shop floor' practical skill sets prospective employers require.

Possible subject combinations: Science, Mathematics, Further Mathematics and Engineering Workshop Programme.

Course Content	
<p>The topics studied are:</p> <p>1) Manufacturing Secondary Machining Processes In this unit you will:</p> <ul style="list-style-type: none"> Examine the technology and characteristics of secondary processes that are widely used in industry Set up traditional secondary processing machines to manufacture a component safely Carry out traditional secondary machining processes to manufacture a component safely Review the processes used to machine a component and reflect on personal performance <p>2) Engineering Product Design and Manufacture In this unit learners will explore engineering product design and manufacturing processes and will complete activities that consider function, sustainability, materials and form. You will:</p> <ul style="list-style-type: none"> Learn about the properties and characteristics of a range of ferrous / non-ferrous / polymer and composite materials Engage with the 5 steps of the Engineering design and make process Carry out a design and make exercise 	<p>3) Basic Bench work skills In this module you will:</p> <ul style="list-style-type: none"> Learn how to measure and mark out across a range of materials accurately using a range of tools and equipment such as angle plate / V-block / surface plate / surface gauge Apply correct technique to cut and work with both hand tools and power tools such as scribes, jenny calipers, angle grinders, air saws, nibblers Understand the requirement for appropriate fasteners, fixtures and components, screw thread systems, screw thread nomenclature. MIG welding / spot welding fabrication Apply safe working procedure as to HASAWA law