

## ENGINEERING – LEVEL 2

### RESEARCH ACTIVITY

In preparation for your course and to understand some of the basic terms that you will need a thorough understanding of, please complete the following four tasks:

#### TASK 1.

Broadly, there are two categories of metal and two categories of polymer (plastic); using the internet, identify these categories and one or two raw materials that fit into each.

#### TASK 2.

Understanding material properties is extremely important – these allow an engineer to select the right materials to make a product. Using the internet, investigate and write about the following material properties:

STRENGTH    HARDNESS    MALLEABILITY  
DUCTILITY    ELASTICITY    CORROSION RESISTANCE

#### TASK 3.

Using the internet, identify at least five components of an electrical circuit board and describe the function of each.

What is AC and DC current? Where would you expect to find these in use?

What is an Analogue Circuit, and what is a Digital Circuit? Describe the differences and their applications

#### TASK 4.

Accuracy of measuring is important to engineers; getting things wrong will result in a waste of time, money and material. Have a go at the following task.

You are given a piece of stock material (mild steel) measuring 100 wide x 52 long x 5 in depth.

The cut edges at 52mm are rough due to being sawn from a stock bar, and the finished size needs to be 50mm.

You need to drill two 10mm diameter holes at 40mm from the centre of the material, at the half way line, 25mm.

Try listing the process and tools you would use to prepare and mark out the material ready to be drilled? It may help to draw the component so you can try and work out the process of preparation and marking out.

