



# **Tameside College**

**Engineering**

**BTEC Level 3**

**Applicant Study Pack**

## **Description of course:**

This course is for learners who have an interest in Engineering and how things are made, as this course is all about the theory and science behind Engineering, you will be taught a broad range of knowledge, giving you an informal decision in regards to your progression of this career path and whether it is the path for you.

You will learn through a variety of teaching methods which will aim to meet the needs of each individual and accommodate different learning styles for example, case studies, assessments, group work, practical work, and projects and extended writing.

You will cover units such as Engineering product design and Manufacture; Computer Aided Design and Mechanical Behaviour of Metallic Materials.

## **Task One**

Try to answer as many of the questions as you can below:

What is steel made from?

How is steel made?

Name five ways of processing steel?

Name four types of cast iron?

Describe the atomic structure of steel?

What is a smart material?

Name three types of corrosion?

Describe one method of destructive testing for steel?

## **Task Two**

Watch the video below take notes and answer the questions:

<https://www.youtube.com/watch?v=XsdRo5jvnXo>

- 1) Which gas is added to titanium ore in the manufacture process?
- 2) Which components are manufactured using titanium?

### **Task Three**

To be completed during the summer and be prepared ready for the start of the course in September.

Research the following historical engineers and their engineering achievements:

1. James Dyson
2. IK Brunel
3. Norman Foster
4. Abraham Darby

Research the following recent engineering projects

5. UK Channel Tunnel construction
6. Kobe Bridge
7. Red Bull Stratos

Present your findings as a printed portfolio of information using writing, drawings, diagrams, and photos where necessary to illustrate your understanding of each. Presentation should be an A4 presentation folder or binder so it can be easily read by others. Use your analysis skills to answer the following questions:

1. What was the reason for the development of this engineered solution?
2. How did this change things compared to what had gone before?
3. What were the major problems facing the project?
4. What engineering breakthroughs/ new technology was developed as a result?
5. How did this development lead onto further technological advances and what were they (or are they likely to be)?

### **What next?**

- Visit our website – [www.tameside.ac.uk](http://www.tameside.ac.uk) for more information.
- Attend our Virtual New Students' Day.
- Make it official, join us for enrolment in August. Letters will be sent to all applicants at the end of July with more details.