

#TRANSFORMINGLIVES

Hartlepool College
of Further Education



SCHOOL OF ENGINEERING
**LEVEL 3 EXTENDED CERTIFICATE IN
ENGINEERING (AERONAUTICAL)**

TRANSITION PACKAGE

WELCOME & COURSE OVERVIEW

Hartlepool College of Further Education has a proud history of training new generations of engineers and technicians; we continue that tradition with our Level 3 aeronautical programme and a brand-new curriculum for September 2020. The aeronautical course is one of the most popular within the School of Engineering.

The Level 3 Extended Certificate in Engineering (Aeronautical Strand) is designed for school leavers with a good grasp of scientific and technological subjects who wish to take their first steps towards a career in the fascinating world of aeronautical engineering. This programme has been designed to give learners a good grounding in fundamental topics across engineering science, design and aeronautical principles, whilst at the same time developing abilities across a range of practical skills.

Learners should have, at minimum, five GCSEs at grade 4 or above, including Maths and English. Higher grades in science, maths and technology subjects are desirable.

Learners who successfully complete this programme of study may have the option to complete a further year to acquire more specialist knowledge and gain a Level 3 Extended Diploma in Aeronautical Engineering, or progress to employment, apprenticeships and higher education.

WHAT WILL I STUDY?

Learners will attend five different classroom-based sessions:

- Engineering Principles, covering mechanical and electrical science, and the application of mathematics;
- Engineering Design Practices, covering common engineering processes, health and safety and the stages of design and manufacture;
- Engineering Communication, covering technical drawing, computer-aided design and effective teamwork;
- Flight Principles and Practice, covering fluid dynamics, theory of flight and aircraft control;
- Aircraft Gas Turbine Engines, covering thermodynamics, engine systems, performance and enhancement.

Learners will also complete three extended workshop sessions across the year:

- Mechanical Fitting
- Machining
- Aircraft Workshop

Personal protective equipment (PPE) will be provided to all new engineering students for use in the workshops.

HOW CAN I PREPARE FOR THIS COURSE?

Prospective learners need to be hard-working, motivated and have an enquiring mind. Organisation is a key skill; learners will be expected to maintain a file of the work they complete in class and meet deadlines for assessed work.

Prospective learners should complete the key tasks below before September and bring them to their induction period when they start the course.

Carry out the attached questions 1 to 3.

Question 1 - Name the aircraft components from 1 to 8

TASK 1:
AEROSPACE
KNOWLEDGE



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

| No. | Component |
|-----|-----------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |

Question 2 - Aircraft recognition - name the aircraft from 1 to 13

| No. | Aircraft |
|-----|----------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |

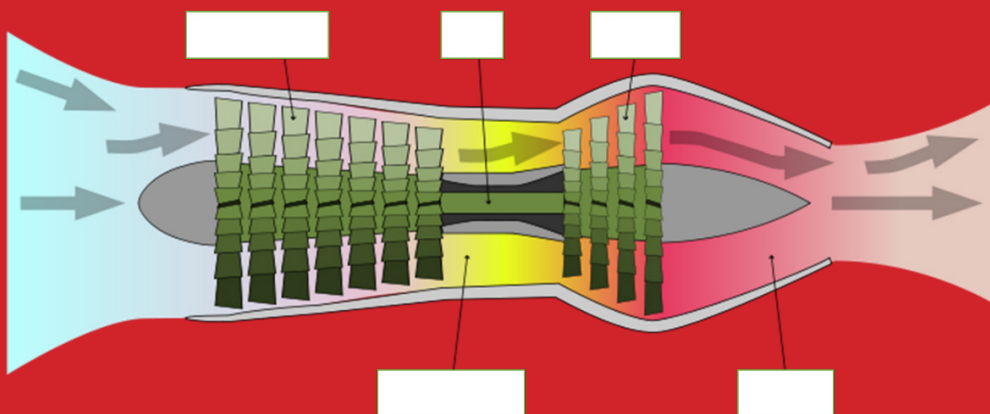
| Aircraft | | | | | |
|----------|---|---|---|----|--|
| 1 |  | 5 |  | 9 |  |
| 2 |  | 6 |  | 10 |  |
| 3 |  | 7 |  | 11 |  |
| 4 |  | 8 |  | 12 |  |

Aircraft

13



Question 3 - Name the parts/components of the engine and describe what they do.



TASK 2: AWARENESS OF THE ENGINEERING WORLD

Awareness of the Engineering World

Rolls Royce (RR) is a major manufacturer of aircraft engines, powering aircraft all over the world.

Carry out research on a RR engine manufacturing plant.

Produce a fact sheet, no more than one side of A4 paper, detailing: where is the plant located; what engine types the company manufactures; what aircraft use Rolls Royce engines (you may include military aircraft too) and any other information of interest to you.

ADDITIONAL INFORMATION

All aeronautical students have visits to aircraft establishments when opportunities arise and take part in a dedicated engineering programme/work experience with 100 Squadron RAF Leeming on Bae Systems Hawk TMk1 aircraft.

KEY CONTACTS:

John Applegarth – Course Tutor

Katie Thacker – Course Tutor

Lewis Light – Course Tutor

john.applegarth@hartlepoolfe.ac.uk

katie.thacker@hartlepoolfe.ac.uk

Lewis.light@hartlepoolfe.ac.uk