

ENGINEERING

SUMMER PROJECTS
YEAR 11 STUDENTS

MECHANICAL ENGINEERING:
**MECHANICAL
ENGINEERING PRINCIPALS**



HEART OF
WORCESTERSHIRE
COLLEGE

KICK START YOUR STUDY AT HOW COLLEGE WITH ONE OF OUR CURRICULUM BRIDGING PROJECTS

Background:

Engineering covers a wide variety of subjects and includes a number of specialist areas such as mechanical, civil, manufacturing, chemical and electrical. One of the subject areas in engineering that all engineers study to gain knowledge is mechanical engineering. As part of your engineering course at HoW college, you will study units on Mechanical Engineering.

Tasks:

Students in year 10 and 11 visit the college facilities and workshops and meet staff members to have a better overall idea about engineering.

We would like you to produce an A3 poster that we could display in our campus to provide an easy way to understand information about Mechanical Engineering principles.

Key information to include:

- Write an introduction that explains the difference between scalars and vectors quantities.
- List five scalar and vector quantities.
- SI units are an engineering system of units adopted internationally, list and explain the six fundamental base units, for each fundamental base unit list its physical property name and the relevant base unit.
- List the common derived units (physical property name and base unit) from the fundamental base units.
- In calculations, units must be compatible, use the laws of indices to convert:
4.2 km into mm.
4 mm² into m².
- List the types of careers and jobs available to engineers with Mechanical engineering knowledge.

Use the internet to help with your research. Here are a couple of examples to get you started:

www.khanacademy.org/

www.bbc.co.uk/bitesize/guides/z826y4j/revision/1

Remember:

- Try to be as creative and engaging as possible.
- Use images, diagrams and pictures.
- You may use photoshop or any photo editing software if needed.

Indicative time for this project:

20 hours.

Instructions on how to submit this:

You can email your submission to:

e. engineeringworcs@howcollege.ac.uk

How will I benefit from this project:

You will gain a basic understanding of Mechanical engineering principles that you will use to build upon when you start the course at HoW college in September.

What can I expect to get back after I submit my project work:

You will receive a feedback from our expert tutors on the start of your course in September.

Key information you should include:

Your name

Your email address

A contact telephone number