



# Holy Family Catholic School



## December Careers Newsletter

Issue 5: Dec 2021

This Month's newsletter will focus on the Engineering Industry.

Let's explore the world of engineering and look at some of the careers which are on offer within this industry.

### Engineering Jobs:

These are just a few of the jobs within the engineering sector: Mechanical engineer. Materials engineer. Electrical engineer. Electronics engineer. Petroleum engineer. Chemical (process) engineer. Biomedical engineer. Technical sales engineer.



Welcome to the next edition of the Careers Newsletter, this month will look at various careers in the Engineering Sector.

### Mechanical Engineers

Mechanical engineers **design power-producing machines**, such as electric generators, internal combustion engines, and steam and gas turbines, as well as power-using machines, such as refrigeration and air-conditioning systems. Mechanical engineers design other machines inside buildings, such as elevators and escalators



### Biomedical Engineers

Biomedical engineering is the application of the principles and problem-solving techniques of engineering to biology and medicine. This is evident throughout healthcare, from diagnosis and analysis to treatment and recovery, and has entered the public conscience through the proliferation of implantable medical devices, such as pacemakers and artificial hips, to more futuristic technologies such as stem cell engineering and the 3-D printing of biological organs.

[Biomedical Engineering: What is it and what are the career opportunities? \(mendeley.com\)](https://www.mendeley.com/publications/10.1002/9781118465651.ch101)

### Forensic Engineering

Forensic engineering is primarily concerned with the link between engineering at law, whether civil or criminal. The purpose of an investigation will usually be to discover the cause of failure in a particular material, component, product, or structure, and determine whether this failure was accidental or intentional.

<https://aboutforensics.co.uk/forensic-engineering/>



## Skills Builder

**Skills needed in the Engineering Industry.**

**So, let's look at the top seven skills engineers need:**

- Communication
- Leadership
- Interpersonal
- Critical Reasoning
- Creativity
- Innovation
- Enthusiasm

## Other Skills

- Problem-Solving (One of the most crucial skills an engineer can possess is strong problem-solving abilities).
- Computer Science
- Industry Skills
- Pressure Management
- Teamwork
- Attention to Detail
- Data Modelling
- Resilience & Self Discipline
- Reporting Skills (Written and Verbal).

## Entry Requirements

You'll usually need **at least five GCSEs** (or equivalent Level 2 qualifications) at grade C or above, including Maths, English Language and Science.

A level – To get on to an engineering-related degree, you will usually require a minimum of two A levels, with **three A levels and A/B grades** required for the most popular courses. Entry requirements range from CCC to AAA, with the universities and colleges most commonly asking for ABB.

## Is Engineering hard to study?

Engineering is the blended application of science and maths to design, build machines and structures. ... It is **considered one of the toughest fields in education** when you explore deep into the multiple engineering branches you will see this. But not impossible.

## Which Engineering is best for the Future?

Let's look at this, as we know what happens in the future has an impact on industry, jobs, education, so let's look at where the future lies within Engineering:

- Aerospace Engineering.
- Chemical Engineering.
- Electrical and Electronics Engineering.
- Petroleum Engineering.
- Telecommunication Engineering.
- Machine Learning and Artificial Intelligence.
- Robotics Engineering.
- Biochemical Engineering.



These are the Engineers that remain on the UK skills shortage list

Architects  
Civil Engineers  
Design and Development Engineers

Electronic Engineers  
Mechanical Engineers  
Production and Process Engineers

## Parents how to help your child's career development:

This month looks at Engineering: (Link below will take you through how you can support your child if they decide to do a career in engineering. It is full of information for you as a parent and has been developed by several companies.

<https://www.iheem.org.uk/wp-content/uploads/2020/10/leaflet-parents-guide-to-engineering-careers.pdf>

## ROYAL ACADEMY OF ENGINEERING

The Royal Academy of Engineering is a charity that harnesses the power of engineering to build a sustainable society and an inclusive economy that works for everyone. In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation, and building global partnerships, and influencing policy and engaging the public. Together we're working to tackle the greatest challenges of our age.

<https://www.raeng.org.uk/>

## Tomorrow's Engineers

Engineering is a subject that encourages curiosity and problem solving when looking at the world around us.

Try this quiz and become inspired to be an engineer:  
<https://mtfy.org.uk/>

### What makes you want to be an Engineer of Tomorrow?

Budding engineers use a **mathematical and scientific understanding of the world to see how things and actions are done**. Curiosity and intuition are what drives engineers forward, as well as modern technology and innovation. Curiosity comes natural to most engineers but can also come to them through exposure and training.

The case for increasing both the number and diversity of the engineering workforce is compelling and, with research showing the positive impact of STEM careers activity on young people's understanding of engineering and their likelihood to consider an engineering career, Tomorrow's Engineers, led by [EngineeringUK](#), brings together resources to support practitioners in getting the most out of their engagement activity.



## Civil Engineering:

It is everything you see that's been built around us. It's about roads and railways, school, offices, hospitals, water, and power supply and so much more. The kind of things we take for granted in today's world, however, without these things our life would be very hard. Explore what it's like to be a civil engineer, shaping our world, in our computer-simulated centre of civil engineering. Watch your choice of film in our cinema (don't forget the popcorn), enjoy the gallery of incredible civil engineering projects and meet civil engineers from all walks of life and roles in this inspirational virtual world.

<https://ice-inspire.co.uk/>



## Useful Websites

<https://www.britishcouncil.org/tr/en/study-uk/discover-engineering-uk>

<https://www.birmingham.ac.uk/university/colleges/eps/outreach/engineering/index.aspx>

<https://education.theiet.org/secondary/careers/meet-the-future-you-quiz/>

<https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors/engineering-and-manufacturing/how-to-become-an-engineer>

<https://www.ucas.com/explore/subjects/engineering-and-technology>

### OUR CORE VIRTUES



Awakening minds



Achieving dreams



Serving others