



# The Holy Family

## Catholic School

a voluntary academy



### April Careers Newsletter 2023

#### Careers within the Engineering Sector

Issue 7 April 2023

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



In most engineering disciplines, the UK is among the top four countries in the world in terms of the quality of its research output. The engineering profession has formed an alliance, **Engineering the future**, to strengthen our engagement with policy makers. Support the economy through engineering innovation.

The engineering and manufacturing sector provides huge scope for technical minded problem solvers. If you have the right qualifications and skills employers are in desperate need of your talents

So, if you are concerned with the design, building, maintenance and use of engines, machines, and structures, at its heart engineering is about problem solving and using your science, math's, and technological ability to apply innovations to the real world.

#### Skills Builder

So, what kind of skills do employers want? In the engineering sectors the following are highly valued by employers.

- IT knowledge
- An elevated level of numeracy and analytical skills
- Specific subject knowledge and technical ability
- Creative problem solving
- Attention to detail.
- Communication
- Teamwork
- Leadership skills
- The ability to project manage.
- Commercial awareness.
- Computer Science
- Pressure Management
- Presentation skills
- Research skills
- Design abilities
- Software skills
- Accounting skills

#### Qualifications needed for the Engineering Sector

To become an engineer, you'll need specific qualifications and some engineering work experience under your belt. Good GCSE grades in Math's, English, Science, Design, IT.

#### A-levels

If you want to become an engineer, studying maths and physics at A-level is often essential, while budding chemical engineers should pursue chemistry. Further maths and design technology are also useful choices.

The grades you need to get into university vary depending on the institution and course, but prestigious universities seek top marks. For example, the University of Cambridge requires two A\* and an A to study engineering at undergraduate level, while the University of Oxford asks students to achieve two A\* and an A in physics, maths, or further maths to study its four-year MEng in Engineering Science.

While all engineering courses require you to put in the work at A-level to gain a place, not all programmes demand A\* grades. For entry onto the Engineering BEng at the University of Birmingham you'll need AAB, while the Electrical and Electronic Engineering MEng at the University of Nottingham requires ABB.

[How to become an engineer | Prospects.ac.uk](https://www.prospects.ac.uk)

## Engineering Apprenticeships

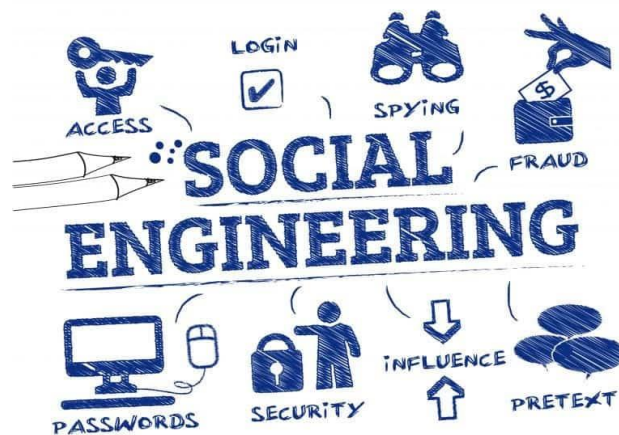
Apprenticeships in engineering give the more practical minded a chance to put their skills to use in a technical environment. They involve completing a national diploma in engineering or an engineering-related subject, while receiving paid on-the-job training from participating firms. If you would like to study at a higher level, you can go on to an engineering degree apprenticeship. A lot of engineering jobs require a degree, so bear this in mind when deciding your career.

Major organisations such as KPMG, Morrisons, Network Rail and the Royal Air Force (RAF) offer apprenticeships in engineering, from intermediate to degree level. Some companies - especially smaller businesses - prefer entrants to take this route, as they can ensure that everything their apprentices learn will directly benefit their organisation. The workload depends on the specific employer, but you could be doing anything from operating machines in factories to installing telecoms systems. To apply, you will usually need good GCSEs in maths, IT, and science, and be aged 16 or over.

### What engineering apprenticeships are available?

Programmes exist in the following areas.

- aerospace
- automotive
- broadcast
- civil engineering
- communication
- construction
- electrical
- energy
- hydraulics
- maintenance
- manufacturing engineering
- marine
- mechanical
- mining
- process engineering
- systems engineering



### Pros within engineering

Engineers use their skills and knowledge to solve problems and create important structures, machines, and processes. Learning the pros and cons of working in this field can help you determine if it's the right career for you. It can also help you develop the necessary skills for success in this position. In this article, we describe what an engineer does and provide 14 pros and cons of being an engineer to help you determine how this position aligns with your career goals.

**Specialisations** as an engineer you can apply your skills to several fields, such as electrical or petroleum engineering. While some industries may require engineers to obtain additional education or training, you can use your fundamental engineering knowledge to prepare you for a variety of roles. This can help you find the engineering position that fits your goals and preferences.

**Work Environment**, engineers can work in office or in the field. Depending on your preferences, you could choose an engineering role in a typical office setting or one that offers more time at project sites. You may also select a role that offers a combination of both. This could give you the chance to work in a setting that aligns with the type of environment you prefer.

**Projects** Engineers often design and build projects that influence daily life. As an engineer, you might contribute to the construction or improvement of projects like bridges and roads that benefit society. If you're interested in a career that can benefit the public, then you may consider becoming an engineer.

### Cons within engineering

There are also disadvantages of becoming an engineer to help you determine whether it's the right career for you:

**Focus of the position:** Engineering work often focuses on complex technological processes and specialized knowledge sets. While you may consider the daily tasks required in this field challenging, projects that require an understanding of complex processes and technologies can often lead to increased engagement in your work, which may provide you with job satisfaction. If you excel in subjects like math and science, a career in engineering may be fulfilling to you.

**Education requirements:** To become an engineer, it's often necessary to earn a bachelor's degree in engineering or a related field. Many engineers also have advanced degrees, including master's degrees or doctorates. While obtaining the proper education for your career can take time and resources, it also helps to ensure you're well-qualified for a position as an engineer. It can also give you the opportunity to expand your skill set and knowledge base, which may help you differentiate yourself from other candidates during the hiring process. These are just a few examples of the pros and cons within engineering, please see link to explore further.

[Pros and Cons of Being an Engineer \(And What They Do\) | Indeed.com](#)

## Roles in the engineering sector

Engineering is a thriving industry with over 1.7 million people employed in the UK. There are a substantial number of jobs available in the engineering sector which can provide opportunities for entry level positions all the way up to management or senior levels.

Some of the roles available within the engineering sector:

Aerospace & Avionics Engineering  
Applications Engineering  
Architectural Engineering  
Automotive Engineering  
Building Services Engineering  
Chemical Engineering  
Civil Engineering  
Commercial Engineering  
Commissioning Engineering  
Computing and IT Engineering  
Construction Engineering  
Contracting Engineering  
Defence Engineering  
Design Engineering  
Electrical Engineering  
Forensic Engineering  
Chocolate Engineering



[The different types of engineering sectors](#) | [Engineer Jobs](#) | [Engineer Jobs](#)

## Useful Websites Engineering

[Engineering Skills: Definition and Examples | Indeed.com UK](#)

[Skills and attributes you need to get into engineering \(brightnetwork.co.uk\)](#)

[Career Path Test: Find Your Ideal Career Path | Bright Network](#)

[Key Graduate Career Skills | Bright Network](#)

[Careers in engineering - BBC Bitesize](#)

[Meet the future you | Home \(mtfy.org.uk\)](#)

[New quiz inspires future engineers - EngineeringUK | Inspiring tomorrow's engineers:](#)

[Engineering careers resources | Neon - Brilliant inspiration \(neonfutures.org.uk\)](#)

<https://youtu.be/czxXY8fh1Ds>

<https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors/engineering-and-manufacturing/nuclear->



## Top Universities for Engineering

**Aeronautical and aerospace engineering** - Imperial College London, University of Bath, University of Bristol, University of Southampton, University of Sheffield

**Chemical** - University of Cambridge, Imperial College London, University of Oxford, University College London (UCL), University of Birmingham

**Civil** - University of Cambridge, Imperial College London, University of Oxford, University of Bristol, University of Glasgow

**Electrical and electronic** - University of Cambridge, University of Oxford, Imperial College London, UCL, University of Southampton

**General engineering** - University of Cambridge, University of Bristol, University of Oxford, University of Sheffield, Durham University

**Manufacturing and production engineering** - University of Cambridge, University of Leeds, University of Bath, University of Nottingham, University of Sheffield

**Mechanical engineering** - University of Cambridge, Imperial College London, University of Oxford, University of Bath, UCL.

### OUR CORE VIRTUES



Awakening minds



Achieving dreams



Serving others