Engineering and technology
the key to the future

Graduates and apprentices working in engineering and technology roles earn more than graduates and apprentices in other areas

Around 20% of all UK jobs are in engineering

Engineering and technology jobs are predicted to grow in all UK regions between now and 2030 – faster than other occupations

Up to 725,000 new low-carbon jobs will be created by 2030 helping us move towards net zero
What do engineers do?

Engineers and technicians are working on solutions to some of the world's biggest challenges, helping us to think differently about critical issues and come up with practical, efficient, sustainable and ethical solutions that enable us – and our planet – to thrive. As an engineer, you could be working with new materials, chemicals and technology to design sports clothing, develop cancer treatments or improve wind turbines. Or you might be part of a team that designs electric planes, surgical robots or earthquake detection systems.

Engineers are making things better by working towards global Sustainable Development Goals (SDGs):

- No poverty
- Reduced inequalities
- Zero hunger
- Sustainable cities
- Good health and wellbeing
- Responsible consumption and production
- Clean water
- Climate action
- Clean energy
- Biodiversity

Engineers are also transforming sport, fashion, gaming, TV, film, health and wellbeing, using their skills to create more exciting, impactful, inclusive and sustainable ways for us to make the most of our free time. From re-designing sports arenas, hospitals and concert venues, making them greener and more accessible to people with different needs, to creating apps, enhancing visual effects for TV and film, and improving VAR technology.

UK engineering businesses are seeking a diverse workforce

Engineering is about creating, modifying, adapting and improving things, to enable everyone to live well. Employers in the engineering and technology sectors are actively seeking to recruit people who can offer experiences and ideas that reflect the population's diversity.
Unlike some other professions, engineers will always be needed. Machine learning and artificial intelligence (AI) systems are becoming increasingly advanced and their capability to perform everyday and complex tasks is growing all the time. While this is likely to have an impact on some jobs, which may cease to exist in the future, it will increase the demand for engineers and technicians who are needed to develop, integrate, test, use and improve the AI systems, as well as support people to use them safely and responsibly.

The types of job roles that are likely to appear in job searches in the coming years include:

- Solar energy adviser
- Carbon removal scientist
- Recycled goods designer
- Body part developer
- Augmented reality technician
- Autonomous transport specialist
- 3D printing food consultant
- Renewable power consultant
- AI Engineer
- Environmental impact assessor
- Cybersecurity specialist
- Biotechnologist
- Ethical hacker

What skills will be needed in the future?

We all have skills, which we have been developing since we were young, so the chances are, you are already practising many of the skills that could help you progress into engineering.

These include:

- Creativity
- Teamwork
- Open-mindedness
- Social conscience
- Communication
- Determination
- Innovation
- Problem-finding and solving

Engineers and technicians use their skills to improve the design and performance of everything we use today and to develop the products, processes and technologies of the future. Many jobs in the future will involve advanced digital and computing skills. In the coming years, there will be an increasing demand for people who can handle complex information, embrace change, and have an inclusive and ethical mindset.

**Ethical decision-making** - being able to consider the impact of different courses of action on others and demonstrate fairness, care and responsibility - will be an important skill.

Take the [Meet the Future You Quiz](http://www.mtfy.org.uk) to match your strengths and interests to different types of engineering and technology.
Which subjects will help keep options open for a career in engineering?

Engineering typically uses maths, science – often physics – and subjects such as D&T, computing, electronics and construction, to improve the world around us.

There are routes into engineering for people who have not studied maths and physics. Additionally, other subjects are also valued by engineering degree courses and employers, including geography for civil and environmental engineering, chemistry for chemical and biomedical engineering and art and design for product design and design engineering. Languages can also be an advantage.

What next?

- Explore different engineering job roles and hear people talking about what they do: www.neonfutures.org.uk/case-study www.thisisengineering.org.uk

- Find out more about the different pathways into engineering, including apprenticeships, university degrees, T Levels and other vocational qualifications: www.neonfutures.org.uk/all-routes www.neonfutures.org.uk/t-level

- Take a look at green skills and jobs: www.greencareershub.com

- Explore recommended podcasts, TV shows, days out, competitions, books and activities that will help develop your STEM skills and knowledge and find opportunities to put these into practice: www.neonfutures.org.uk/my-world

Information included in this leaflet is based on EngineeringUK research: www.engineeringuk.com/research

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