The Engineering Apprenticeship Guide

What are engineering apprenticeships?

Find out where an apprenticeship in engineering could take you

Apprenticeships combine work-based study with on-the-job training, and pay. As an apprentice, your employer will pay for your training costs including tuition fees. With the cost of university fees getting higher, an apprenticeship could be a different path to explore.

What's a higher or degree apprenticeship?

It's an alternative route to a degree, which involves working and studying at the same time. You gain hands-on experience while training, along with a salary, and graduate without tuition fees. See table for education levels. Find out more at which.co.uk/apprenticeships.

Engineering options

As an engineer apprentice you will solve real-world problems in an industry where your skills will be in demand. Engineering UK suggests a need for 186,000 new engineers each year until 2024 to address the skills shortage.

The opportunities in engineering are many and varied. Industries that require engineers include food, cosmetics, automotive, aeronautical, rail, water and energy supply, construction, health, sport, music, and more.

Whether you want to design a roller coaster, turn potatoes into crisps, develop renewable energy options or help humans survive on Mars, there's an engineering route for everyone. Consider the types of problems you are interested in solving: mechanical, electrical, chemical, or civil (the design and maintenance of a country's infrastructure).

If you're interested in computer engineering, take a look at our Digital, IT and Tech Degree Apprenticeship Guide at which.co.uk/apprenticeships.

"The program is organised well - your time is split into university and work rotations, typically 3 months is spent completing university modules and then 3 months on a work placement, working in a variety of engineering departments across the BBC and other companies such as Dock 10, ITV and Arqiva. "

Apprentice, Broadcast Engineer, BBC*

"I have learnt how an ordering or purchasing system works within a huge company such as Siemens. Training courses are also provided, such as LV Code of Practice, AutoCAD Engineering, PCS7 programming, TIA Portal."

Engineer degree apprentice, automation and control at Siemens*

Opportunities range from level 4 higher apprenticeships – including electrical power networks, space engineering and nuclear technology – up to level 7 master's degree apprenticeships, including power engineering or process automation.

Apprenticeship	Level	Equivalent educational level
Advanced	3	2 A-level passes/ Level 3 Diploma/ International Baccalaureate
Higher	4, 5, 6 and 7	Foundation, bachelor's or master's degree
Degree	6 and 7	Bachelor's or master's degree

What to expect from an engineering apprenticeship

How does it compare to the uni route, and what are employers looking for?

How does it compare to the university route?

A degree apprenticeship in engineering is equally as valid as a university degree. If you prefer learning while on the job an apprenticeship may be for you. However, it's not an easy route to a degree, so don't underestimate the challenge of balancing a higher or degree level qualification with (almost) a full-time job. Employers will give you responsibilities and expect you to contribute quite quickly once you have settled in. It tends to be a steep learning curve.

Many higher or degree level apprenticeships can lead to membership of engineering institutions that recognise the professional status of engineers. Some of the master's degree apprenticeships lead to chartered engineer status, which demonstrates engineering expertise and should help future career prospects.

Outside your day-to-day work, some companies will send you on training programmes. Others have on-site gyms and sports facilities, and many offer social programmes so you can get to know your colleagues.

What's involved in an apprenticeship?

Programmes vary in length from 12 months for some level 4 apprenticeships to over five years for some of the highest level apprenticeships.

As part of your apprenticeship scheme, your employer and training provider will decide exactly how your time will be divided between work and study. Some apprentices attend university or college one day per week; in other cases, intensive blocks of study of a week or more might be combined with online support.

The precise details of what you learn will depend on the role and the industry. The content will vary according to the field of engineering. See examples below:

- A civil engineering degree apprenticeship should cover how to manage people, budgets and tasks, as well as how to work safely and sustainably while following quality standards.
- On a food engineering degree apprenticeship, apprentices will consider wider business matters while learning how to design, develop and commission workable solutions to engineering problems.
- Aerospace engineering degree apprentices learn about regulations, quality and business improvement, engineering maths and aeronautical and material sciences, while developing technical skills and understanding engineering processes.

With large apprenticeship schemes, it's quite common to go on job rotation, experiencing different departments before working out what's a good fit for your strengths and abilities. You should find out whether your chosen scheme offers this through your research or during the recruitment process. Higher and degree apprenticeships tend to lead towards an academic qualification such as a BEng (Hons) degree, for example, along with the professional certificates required to do the job.

What are employers looking for?

Entry requirements vary from employer to employer, but studying maths and a relevant STEM subject at A-level (or equivalent) often helps. Three Cs at A-level (or equivalent) should meet the requirements for many degree apprenticeships. On top of this, some employers look for five or more GCSEs at grade 4-9 (A*-C).

See below for some examples of qualification requirements for engineering degree apprenticeships:

- 96 UCAS points at A-level including maths and a STEM subject.
- A-level maths or an A-level in a science subject, or level 3 BTEC engineering, or completion of a level 3 Engineering apprenticeship.
- A-levels at grade C or above in a maths-based subject and an additional STEM-related subject, or 90+ credits in an engineering BTEC (or equivalent).

Remember that employers are looking for the full package: qualifications, relevant skills and a proven interest in engineering. Essential skills might include:

- teamwork
- communication
- creativity
- problem-solving
- attention to detail
- analysis
- technical and practical skills.

As an undergraduate engineer at Dyson, you'll need at least AAB at A-level (or equivalent), including an A grade in maths and one other science, technology or engineering-related subject. Dyson has high expectations for their apprentices:

'We're looking for people who are passionate about engineering and technology. You'll need to be a creative problem solver, an excellent team-player and a great communicator. You'll also need to be self-aware, and self-managing in your approach to work and study.'

"The apprenticeship has given me more opportunities than I could ever ask for and I would recommend it to anyone who is interested in having a future working for an engineering company. The skills and qualifications that I have gained while being at BAE Systems will be hugely beneficial for the rest of my career and I would not have been able to do the things that I have done if it weren't for the apprenticeship."

Engineering degree apprentice, BAE Systems*

"My daily tasks are working on automation projects specifically doing technical electrical drawings, whether it's creating them or editing them with software. I also make component parts lists based on the project requirements for components to be ordered, and build the panels once the components are in for testing and configuring of the automation systems. Training courses are also provided, such as LV Code of Practice, AutoCAD Engineering, PCS7 programming, TIA Portal."

Engineer degree apprentice, automation and control at Siemens*

FACT

Nearly 9 out of 10 apprentices are satisfied with their apprenticeship overall.*

*Statistics from Gov.uk

Getting an apprenticeship

How much could you earn and where could it lead?

How to apply

Application processes vary slightly from employer to employer. For the most competitive and prestigious opportunities, you will go through a rigorous recruitment process. Companies might have to select a handful of the best candidates from hundreds or thousands of applications. Recruitment for degree apprenticeships has lots in common with graduate recruitment processes.

Although businesses recruit in different ways, many large firms share some common practices.

For example, if you're applying for a position with Rolls-Royce, once you've submitted an online application you'll be asked to sit online tests within 10 days.

Successful applicants will then be invited to an assessment centre for the day, which might include a practical test of hand-eye coordination, a group activity to assess teamwork skills, a motivational interview including a presentation, and an interview to assess technical understanding and overall understanding of Rolls-Royce.

Smaller companies tend to use simpler processes to ascertain an applicant's suitability. A small business is unlikely to have the resources to run a big assessment event, but they might get support from other organisations with their recruitment.

Keep an eye out for opportunities throughout the year, but autumn through to spring tends to be the busy period for higher-level and degree-level vacancies.

You'll find further details on how to apply for an apprenticeship in our degree and higher apprenticeship guide available at **which.co.uk/apprenticeships**.

How much can I expect to earn as an engineering apprentice?

The minimum wage for an apprentice is £3.70 per hour (April 2018) but you could be looking at a salary of at least £12,000 per year (more in London) for a higher apprenticeship. In practice, many employers will pay considerably more than this, with many engineering degree apprenticeships reviews on Rate My Apprenticeship revealing initial annual salaries of between £16k - 20k.

Where could it lead?

The opportunities on offer will vary depending on your experiences within the apprenticeship, the pathway taken and the employer.

Roles after a higher or degree apprenticeship include working as an engineer or engineering technician within sectors which include:

- aerospace
- agriculture
- automotive
- building services
- chemical
- civil
- biomedical
- electrical
- electronics
- sound
- marine
- materials
- mechanical
- motorsport
- rail
- structural
- telecommunications.

Roles exist within research and development, production and maintenance, quality testing, sales and so on. Some engineers opt to climb the ladder to senior leadership within an organisation.

Future salary range

Average salaries for engineers range from around £20k to £80k per year, according to National Careers Service. Roles for engineering technicians might range from £20k to £40k.

Additional training

You may have to undertake specific training for certain apprenticeships eg level 3 training in coding, even though you may have been educated up to a level 3 beforehand in A-levels for example.

"Be yourself, ensure you know the role you are applying to, having work experience helps, don't expect to know and learn everything at once as there is so much to take in. If you want something done, you have to go out and make it happen. It looks good on you as others are willing to see you are proactive."

Civil Engineer apprentice, Mace Group

Where to find out about apprenticeships

Find out what companies and universities are taking part in apprenticeship schemes

If you don't know where to begin with your search for an engineering apprenticeship you may find the following lists of companies and universities helpful.

Companies offering engineering apprenticeships:

- AECOM
- Airbus
- Arcadis
- Armed Forces
- Atkins
- Babcock International (Marine)
- BAE Systems
- Balfour Beatty
- BBC
- Boots
- Dyson
- GE
- GSK
- Jaguar Land Rover
- Laing O'Rourke
- Mace Group
- National College for High Speed Railway
- National Grid
- Network Rail
- Renishaw
- Rolls-Royce
- Sellafield
- Severn Trent
- Siemens
- Thales
- Transport for London
- Troup Bywater + Anders
- Unilever
- Virgin Media
- Wessex Water
- WSP

Don't miss out on opportunities with small to medium-sized employers. Take a look at the National Apprenticeship Service website or research the employers in your area who might be looking to train up engineers.

Universities offering engineering apprenticeships:

- Alstom Academy for Rail
- Aston University
- Coventry University
- Cranfield University
- University of Central Lancashire
- University of Derby
- University of East London
- East Surrey College
- EEF Ltd
- University of Essex
- University of Exeter
- Gloucestershire College
- Harper Adams University
- Kingston University
- Leeds Beckett University
- University of Lincoln
- Liverpool John Moores University
- London South Bank University
- Middlesex University
- Nottingham Trent University
- The Outward Bound Trust
- Pendersons Limited
- University of Portsmouth
- Prospects College of Advanced Technology
- University of Sheffield
- Sheffield Hallam University
- Siemens
- Staffordshire University
- University of Sunderland
- Teesside University
- University of Warwick
- Warwickshire College Group
- University of the West of England
- University of West London
- Wigan and Leigh College
- WKCIC Group
- University of Wolverhampton

You'll also find a range of colleges and private organisations delivering the training for engineering higher apprenticeships.

Finding out more

- Tomorrows Engineers
- National Apprenticeship Service
- Rate my Apprenticeship
- UCAS Careerfinder
- All About School Leavers

RATEMY APPRENTICESHIP

***With thanks to ratemyapprenticeship.co.uk for sharing reviews and apprentice experiences.**

TOP TIP

Find out about other degree apprenticeships in the specialist section on our website: which.co.uk/apprenticeships