Electronics Engineer

Electronics engineers research, design and develop a wide range of equipment and components which use electronics, including telecommunications systems and computer-controlled systems.

The Work

You could be:

- discussing a client's requirements and drawing up plans, diagrams and technical drawings
- working on the design, production and testing of electronic components such as integrated circuits, memory devices, connectors and printed circuit boards
- working on the design, production and testing of other electronic equipment such as scanners, timing devices, medical apparatus and robotic systems
- working on telecommunications equipment and systems, including television services, telephone systems, digital exchanges and networks, optical cables, aerials and satellites
- working on the electronic control systems used in manufacturing industry, defence systems, ship and aircraft navigation or hospitals
- providing electronics expertise in a wide range of other industries, including broadcasting, oil and gas, transport and all kinds of manufacturing
- supervising the work of electronics technicians and craftspeople
- writing technical reports and giving presentations
- planning and managing projects and budgets.

Pay

The figures below are only a guide. Actual pay rates may vary, depending on:

- where you work
- the size of the company or organisation you work for
- the demand for the job.

The starting salary for electronics engineers at graduate entry is usually around £30,000 a year. With experience salaries can range between £40,000 and £60,000 a year or more.

Conditions

- Working conditions vary according to the work, but many electronics engineers are based in offices or modern design laboratories and work normal hours.
- In some factory situations, however, conditions may be more noisy or dirty.
- You may have to be on call outside normal hours or to work shifts.
- You may have to travel to visit clients and work on site.

Getting In

- You would normally need an HNC (SCQF Level 7), HND (SCQF Level 8) or degree (SCQF Level 9-11) in a subject such as electronic and electrical engineering. Other subjects such as systems engineering, computer engineering or physics and applied physics, may be acceptable.
- For entry to an HNC or HND course you normally need 1-2 Highers plus some subjects at National 5. For a degree course you need 4-5 Highers including Maths and Physics or a technological subject.
- Studying for Foundation Apprenticeship Engineering (SCQF Level 6) while in fifth and sixth year at school could give you entry to an HND or degree in a relevant engineering discipline. Entry requirements vary between colleges, but you usually require 3 subjects at National 5 including English and Maths. You would be expected to have Higher Maths by the end of sixth year.
- You may be able to qualify by other training routes.
- Certain colour vision conditions may affect entry into careers in this branch of engineering.

Electronics engineers work in a wide range of industries including aerospace, telecommunications, IT, energy, gas, water, manufacturing and defence. There are also opportunities in educational institutions and the public sector.

What Does It Take

You need to have:

- a strong interest and ability in maths, science and technology
- technical and IT skills
- a creative and analytical approach to solving problems
- good communication skills
- a good understanding of health and safety issues.

You need to be able to:

- handle complex information and develop clear ideas
- understand and produce technical drawings
- manage projects and meet deadlines
- plan and organise programmes of work and manage others
- keep within a budget
- take responsibility and make decisions
- work on your own as well as part of a team.

Training

- You may be able to follow a graduate trainee scheme.
- After gaining your HNC, HND or degree and some further training with an employer, you can register with the Engineering Council as a professional engineer – either Incorporated Engineer (IEng) or Chartered Engineer (CEng).
- For IEng you need to have either a recognised Bachelor's degree or a recognised HNC or HND plus further study to Bachelor's degree level.
- For CEng you need to have a recognised Bachelor's degree with Honours (SCQF Level 10) plus a recognised Masters degree (SCQF Level 11) (or equivalent), or a recognised integrated Master of Engineering (MEng) degree (SCQF Level 11).

- If you do not have any of the above qualifications, you may still be able to achieve IEng or CEng by other approved routes. You can check these alternative routes with the Engineering Council or with the appropriate professional engineering institution.
- You must keep up to date with advances in technology throughout your career.

Getting On

- Electronics engineers who first qualify as IEng can progress to CEng after further training and experience. This can open up a wider range of opportunities.
- You could be promoted to a senior post.
- You might move into general management, or into teaching and academic research in colleges and universities.
- You might become a consultant offering specialist engineering services.
- There can be good opportunities to work abroad.

More Information

The Engineering Council sets and maintains the standards of the engineering profession in the UK. It does so through 50 professional engineering institutions which are Licensed Members of the Engineering Council.

The Tomorrow's Engineers website has more information on careers in engineering.

Contacts

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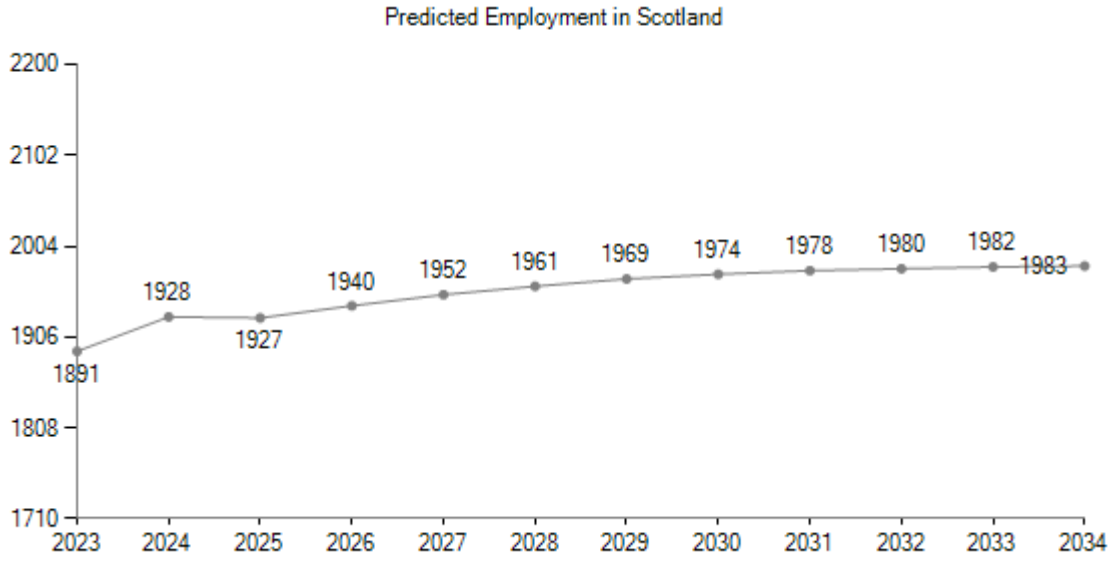
Statistics



Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by LMI for All



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