

Aerospace Engineer

Aerospace engineers apply scientific and technological principles to the design, construction and maintenance of aircraft, missiles, weapons systems, satellites and space vehicles. They may be called aeronautical engineers.

The Work

You could be:

- doing innovative research on new designs for airliners, helicopters, fighter jets or space vehicles
- developing new or existing products, components and systems
- investigating the use of new materials or improving existing ones
- using computer-aided design (CAD) to modify and create designs to improve safety or to reduce fuel consumption or pollution
- developing on-board systems such as navigation and flight controls
- overseeing flight and ground testing of prototypes and analysing test data
- planning and managing the manufacture of aircraft and components
- specialising in research, design, testing, manufacture or maintenance
- writing technical reports and manuals.

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 graduate entrants is usually around £26,000 to £30,000 a year. With experience this can rise up to £45,000 a year. Senior engineers with chartered status can earn up to £65,000, sometimes up to £100,000.

Conditions

- You might work in a design laboratory and spend a lot of time working at a computer.
- You might work in production, in a factory where conditions can be noisy and where there can be the risk of accidents from equipment.
- You might work in an aircraft hangar when involved with testing and maintenance.
- In many cases you would work normal hours, but in factory work you may need to be on call outside normal working hours or to work shifts.
- You might have to travel to visit factories or experimental sites in other areas, possibly abroad.

Getting In

- You normally need a degree (SCQF Level 9-10) in aeronautical engineering, aerospace systems, avionics or a similar subject. Other suitable subjects such as electrical or electronic engineering, mechanical

engineering, software engineering, maths or physics may be accepted.

- For entry to an aeronautical degree course you usually need 4-5 Highers including Maths and Physics or a technological subject plus National 5 English.
- The universities of Glasgow, Strathclyde, Heriot-Watt, West of Scotland and Highlands and Islands all offer relevant courses.
- It can help to have a postgraduate (SCQF Level 11) qualification.
- Aircraft component manufacturers such as BAE Systems, Airbus, GKN Aerospace and Rolls-Royce offer Degree Apprenticeships in Aerospace Engineering. These are unlikely to be in Scotland so you should be prepared to move away from home.
- Work experience, paid or voluntary, can be beneficial. For example, working at an airfield or joining the air cadets.
- You may be able to qualify by other training routes.
- You need good computer skills including computer-aided design (CAD).
- Certain colour vision conditions may affect entry to careers in this branch of engineering.

Many engineers in this field work for aircraft manufacturers, makers of components, airlines, the armed forces or the Ministry of Defence. Others use their knowledge of aerodynamics in the manufacture of motor vehicles, trains and hovercraft or in the design of satellites. Jobs are only available in certain areas of the UK, so you may have to move for work.

What Does It Take

You need to have:

- a strong interest in aviation
- an aptitude for scientific and technical subjects
- good IT skills
- excellent problem solving skills
- good report writing skills
- communication skills to explain complex and technical information, sometimes to non-technical partners
- a good knowledge of engineering licence regulations
- self-motivation
- good organisational skills.

You need to be able to:

- pay close attention to detail
- work to deadlines
- work in a team and support other people's ideas
- work within a budget
- manage your time
- keep up to date with new developments.

Training

- After gaining your 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 either a recognised Bachelor’s degree or a recognised HNC (SCQF Level 7) or HND (SCQF Level 8) plus further study to Bachelor’s degree level.
- For CEng you need 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 the above qualifications, you may still be able to achieve IEng or CEng by other approved routes. You can check alternative routes with the Engineering Council or with the appropriate professional engineering institution.
- You are advised to work towards professional membership of the Royal Aeronautical Society (RAeS) or another engineering institution.
- The RAeS also provides conferences and training courses to help keep you up to date with changes in technology.

Getting On

- If you qualify first as IEng, you can progress to CEng after further training and experience. This can open up a wider range of opportunities.
- You could move into project management or planning.
- You might move into marketing, sales or general management.
- You could work in academic research or teaching in a college or university.
- You might become a consultant, offering specialist engineering services. For example, you may become involved in air accident investigation.
- You might work abroad – this is a global industry.

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 [Careers in Aerospace website](#) has lots of useful information.

Contacts

Royal Aeronautical Society (RAeS)

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Website: www.aerosociety.com

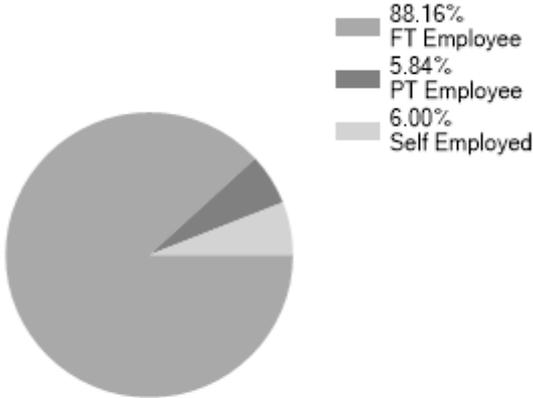
Website (2): www.careersinaerospace.com

X: @AeroSociety

Facebook: www.facebook.com/RoyalAeronauticalSociety

Statistics

Employment Status UK %

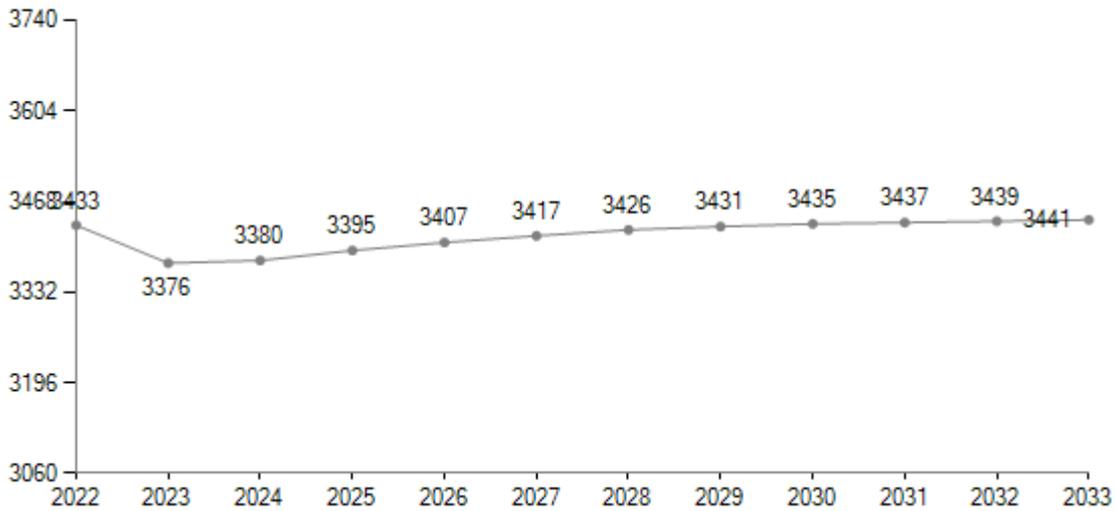


Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by [LMI for All](#)

Predicted Employment in Scotland



LMI data powered by [Lightcast](#)