Biotechnologist

Biotechnologists use a number of different scientific disciplines such as microbiology, molecular biology, genetics and chemistry to research and develop new products and improved processes for a range of different industries including pharmaceuticals, health care, biofuels, agriculture, food and industrial processing.

The Work

You could be:

- using living cells to make products with biological ingredients such as hormones, enzymes, antibiotics and antibodies for agricultural, medical and pharmaceutical purposes
- using living cells in genetic engineering, to develop new or modified organisms, including genetically modified (GM) crops which have high yields and are resistant to pests and diseases
- developing gene therapy techniques to help humans and animals
- using microorganisms to help to break down waste materials
- developing new processes to help detect and control pollution and contamination in the environment
- producing enzymes and preservatives for use in the manufacture of food and drink
- using specialist software and technical equipment, writing reports and keeping records
- monitoring the safety and quality of any product you work with
- keeping up to date with new advances in biotechnology.

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.

Starting salaries for biotechnologists vary depending on which industry you work in. Starting salaries for new graduates may be around £19,000 to £25,000, with experienced biotechnologists earning around £25,000 to £40,000 a year. Some biotechnologists with high levels of responsibility earn up to around £60,000 a year.

Conditions

- Depending on your job you might work in a hospital, industrial or academic laboratory, a factory, an office or a classroom.
- In a laboratory you usually have to wear a lab coat and other protective clothing.
- In some work there may be a risk of infection or allergic reaction but employers train staff to avoid this.
- You would usually work regular hours, but might have to work evenings or weekends.
- You might have to travel to conferences.

Getting In

- You normally need a degree (SCQF Level 10) in biotechnology or a related subject such as biological sciences, bioscience, biochemistry, microbiology, chemistry, food science, biomedical engineering or pharmacology.
- For entry to a degree you usually need 4-5 Highers, normally including at least 2 from Maths, Biology, Chemistry and Physics. Biology and Chemistry are often preferred.
- Some entrants have a specialist postgraduate qualification (SCQF Level 11) in biotechnology.
- Graduates often start out in a technician or research technician post.

You could work in the National Health Service (NHS), scientific research, manufacturing or in the pharmaceutical or food and drink sectors. You could also work in teaching, finance, management, scientific writing, sales and marketing or in government departments.

What Does It Take

You need to be:

- interested in applying biology to health care, agriculture and in industry
- practical, logical and methodical
- patient and willing to persevere
- accurate and careful in recording results
- observant
- able to develop ideas based on the results of your research
- able to write clear and precise scientific reports
- able to work well in teams with other scientists.

You should have:

- excellent communication skills
- good analytical skills
- an enquiring mind
- an eye for detail
- good IT and statistical skills.

Training

- Training is normally on the job so that you develop your skills.
- You may join a structured graduate training programme.
- Some employers may support part time study for postgraduate qualifications.

Getting On

- You usually have to take a postgraduate qualification (MSc or PhD - SCQF Levels 11 and 12) in a specialist area to improve your knowledge base or develop new skills.
- If you want to work in research or in a university you will need to do further study.
- With work experience and further skills, you may be able to move on to become a laboratory supervisor or manager.

- You may move into scientific programme management, leading projects.
- If you take professional qualifications and become a member of a professional body, such as the Society of Biology, this could help you to progress.

More Information

The Plant Science Futures website is a good source of information on what you can do with a career in biology and includes videos, projects and study skills.

Contacts

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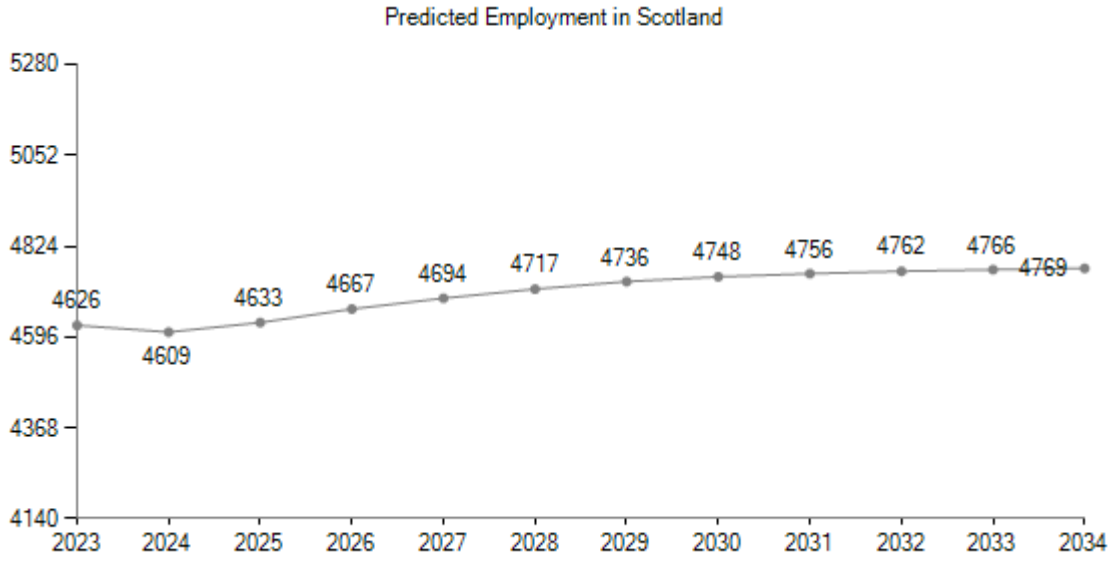
Statistics



Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by LMI for All



LMI data powered by Lightcast