

## Materials Scientist or Engineer

Materials scientists or engineers research, design and develop a range of materials, such as plastics, metals, polymers and ceramics. They study the properties of materials, how they behave in different conditions and work out the best materials to use to make products. They also consider environmentally friendly alternatives and processes.

They may be called metallurgists or polymer engineers if specialising in one type of material.

### The Work

You could be:

- examining the structure and properties of materials
- testing materials to see how they perform under different conditions, such as heat and repeated or prolonged use (fatigue testing)
- choosing the best combination of materials for a particular product
- developing prototypes and carrying out tests
- analysing test data using specialist computer software
- designing manufacturing processes and ensuring they run smoothly
- supervising quality control and investigating reasons for component or structural failure
- determining how the products made and processes used impact on the environment
- supervising a team of technicians and liaising with other professionals.

### 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 salaries for graduate materials scientists are in the range £22,000 to £26,000 a year. With experience or a postgraduate qualification starting salaries can be from £24,000 to £34,000 a year. For senior positions, salaries can reach £60,000 a year.

### Conditions

- Materials engineers mainly work in a laboratory or an office.
- You will probably visit manufacturing sites and suppliers of materials.
- You would usually work regular hours, but some overtime may be required to meet deadlines.
- At times you might have to wear protective clothing, such as a lab coat, safety goggles and face mask.
- There will be strict health and safety procedures to follow.

### Getting In

- You usually need a degree containing subjects such as materials engineering, materials science, polymer engineering, metallurgy or applied chemistry or physics.
- Entry to a degree is usually 4-5 Highers including Maths and a science or technological subject.
- If you wish to gain incorporated or chartered engineer status you must make sure that the degree you study is accredited by the Engineering Council or one of their affiliates.
- Edinburgh Napier University offers the BEng (Hons) Polymer Engineering and relevant postgraduate courses that are accredited by the Institute of Materials, Minerals and Mining.
- You may be able to get in with a Higher National Diploma (HND) or through other training routes at technician level.

Materials scientists or engineers work in a wide range of industries including construction, aerospace, plastics, paper, textiles, oil, gas, coal and artificial fibres. There are also jobs in engineering contracting companies to design and build production plants.

## What Does It Take

You need to be:

- an aptitude for maths, science and IT
- analytical and problem solving skills
- excellent attention to detail
- good organisation and planning skills
- the ability to work in a team and on your own
- the ability to make decisions
- good communication and presentation skills
- commercial business awareness
- a willingness to 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 as Incorporated Engineer (IEng) or Chartered Engineer (CEng).
- Alternatively, you could register with the Science Council, either as a Registered Scientist (RSci) or Chartered Scientist (CSci).
- You must be willing to keep up to date with changes in a fast moving industry.
- The Institute of Materials, Minerals and Mining (IOM3) offers training courses for Continuing Professional Development (CPD).

## Getting On

- Materials scientists or engineers who first qualify as IEng (or RSci) can progress to CEng (or RSci) after further study, training and experience. This can open up a wider range of opportunities.
- With experience and ability, you may be able to move on to senior scientific or management positions.
- You might go into teaching and academic research in colleges and universities.

- You might become a self-employed consultant, offering specialist engineering services.
- You may be able to work abroad.

## More Information

The [Tomorrow's Engineers](#) website has more information on careers in engineering.

## Contacts

### Engineering Council

Tel: 020 3206 0500

Website: [www.engc.org.uk](http://www.engc.org.uk)

Twitter: @EngCouncil

### Institute of Materials, Minerals and Mining (IOM3)

Tel: 020 7451 7300

Website: [www.iom3.org](http://www.iom3.org)

Twitter: @iom3

Facebook: [www.facebook.com/iom3globalnetwork](http://www.facebook.com/iom3globalnetwork)

### Institute of Science and Technology

Tel: 0114 276 3197

Email: [office@istonline.org.uk](mailto:office@istonline.org.uk)

Website: [www.istonline.org.uk](http://www.istonline.org.uk)

Twitter: @istonline

Facebook: [www.facebook.com/istonline.org.uk](http://www.facebook.com/istonline.org.uk)

### Science Council

Tel: 020 3434 2020

Email: [enquiries@sciencecouncil.org](mailto:enquiries@sciencecouncil.org)

Website: [www.sciencecouncil.org](http://www.sciencecouncil.org)

Website (2): [www.futuremorph.org](http://www.futuremorph.org)

Twitter: @Science\_Council

### SEMTA (Science, Engineering and Manufacturing Technologies Alliance)

Tel: 0845 643 9001

Email: [customerservices@semta.org.uk](mailto:customerservices@semta.org.uk)

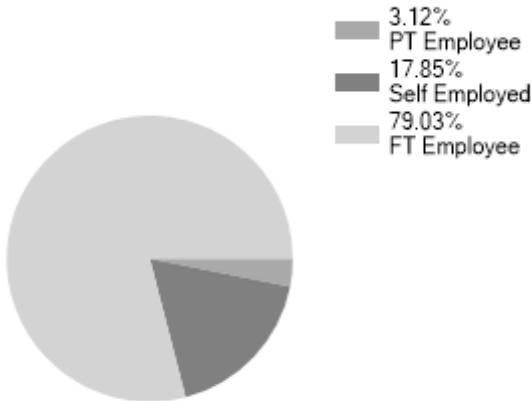
Website: [www.semta.org.uk](http://www.semta.org.uk)

Twitter: @SemtaSkills

Facebook: [www.facebook.com/SemtaSkills?ref=hl](http://www.facebook.com/SemtaSkills?ref=hl)

Statistics

Employment Status UK %



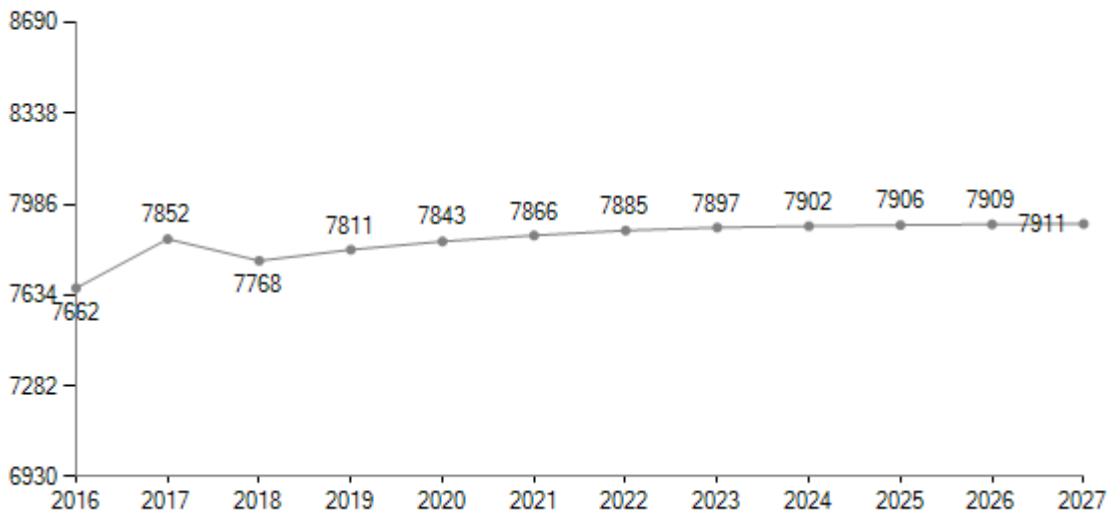
Past Unemployment - Scotland

Date	Unemployed
Dec 2016	0.08%
Jun 2018	0.05%
Sep 2018	0.03%
Dec 2018	0.03%
Mar 2019	0.03%

LMI data powered by [EMSI UK](#)

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

Predicted Employment in Scotland



LMI data powered by [EMSI UK](#)