

## Manufacturing Systems Engineer

Manufacturing systems engineers design, plan, develop and install systems including manufacturing equipment and assembly lines. This covers all aspects of manufacturing processes. They may also be involved in the design and building of a manufacturing plant.

### The Work

You could be:

- designing a plant or production system using computer-aided design software and 3D modelling
- planning resources required and calculating production costs
- studying and analysing production methods to achieve the most efficient use of people, machinery, equipment and materials
- introducing technology such as computer-aided manufacture (CAM) and robotics to make the production processes more efficient
- monitoring performance to identify and solve problems
- writing progress reports on the systems used, analysing costs and the efficiency of production
- implementing quality control standards
- liaising with other engineering specialists and other factory departments such as purchasing, quality control and research and development
- planning and monitoring the installation, maintenance and repair of equipment.

### 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 manufacturing systems engineers at graduate entry is usually around £23,000 to £30,000 a year. With experience this can rise to over £40,000. Senior managers in manufacturing can earn over £60,000 a year.

### Conditions

- You would normally be based in a factory but may travel to other production sites.
- You would spend a lot of time in production areas. Depending on what you are manufacturing, the conditions can be relatively clean and orderly or quite noisy, dirty or dusty.
- You might have to wear protective clothing and footwear and a safety helmet and glasses.
- You would also spend time working in an office or design laboratory.
- Hours can vary, but where there is continuous production you may have to work shifts or be on call outside normal working hours.

## Getting In

- Most entrants have a degree (SCQF Level 9) in an engineering discipline. Relevant subjects are manufacturing engineering, production engineering, software engineering, mechanical engineering or electrical engineering.
- Entry for degree courses are normally 4-5 Highers including Maths and a science or technological subject.
- You might be able to enter with a relevant HNC (SCQF Level 7) or HND (SCQF Level 8). For entry to an HNC or HND course you normally need 1-2 Highers plus some subjects at National 5.
- You may be able to get in through a Graduate Apprenticeship in Engineering: Design and Manufacture and progress to further study or senior roles. For entry you would need 4 Highers including Maths and a science or technological subject. You would need to find an employer to take you on.
- Other engineering qualifications, perhaps with a relevant postgraduate qualification (SCQF Level 11), may also be acceptable.

Engineers in this field work for a wide range of manufacturing companies, including engineering, shipbuilding, food and drinks processing, textiles, clothing, electronics and pharmaceuticals.

## What Does It Take

You need to have:

- a logical, methodical approach
- a creative and practical approach to solving scientific and technical problems
- technical ability and skills in science, maths and IT
- good communication skills
- determination to cope with challenges and overcome problems
- a strong sense of responsibility
- an awareness of health and safety issues.

You need to be able to:

- handle complex information
- plan and organise programmes of work
- work under pressure and meet deadlines
- work on your own and also as part of a team
- encourage and motivate others
- be adaptable.

## Training

- For the Graduate Apprenticeship, after 4 years you will have completed the BEng Hons Engineering: Design and Manufacture.
- After gaining your HNC, HND or degree and some further training with an employer, you can register with the [Engineering Council](http://www.the-engineering-council.org) 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 plus a recognised Masters degree (or equivalent), or a recognised integrated Master of Engineering (MEng) degree.
- 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 new developments throughout your career.

## Getting On

- Manufacturing systems 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 might go on to specialise in a particular area, such as planning and controlling production processes, operational research or designing and implementing computer-based systems.
- You might take other professional qualifications related to manufacturing engineering, such as Six Sigma.
- You may be able to move into marketing or sales or general management.
- You could move into teaching and academic research in a college or university.
- 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 35 professional engineering institutions which are Licensed Members of the Engineering Council.

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

## Contacts

### Institution of Engineering and Technology

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### Institution of Mechanical Engineers

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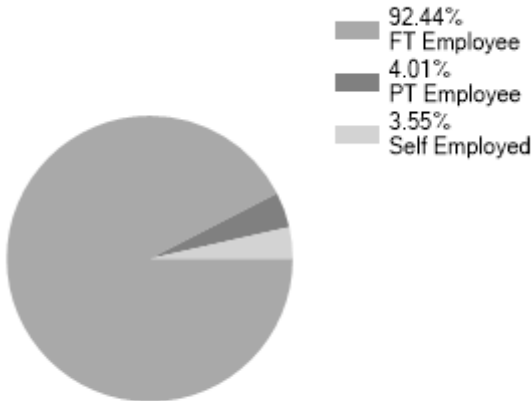
Website: [www.imeche.org](http://www.imeche.org)

Twitter: @IMechE

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

Statistics

Employment Status UK %

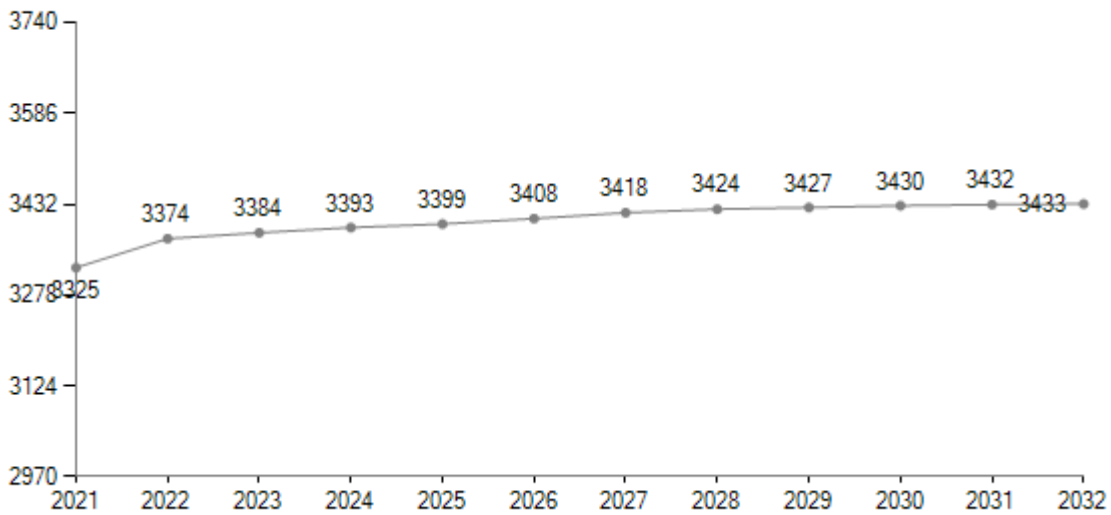


Past Unemployment - Scotland

No Claimant statistics available for Scotland.

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

Predicted Employment in Scotland



LMI data powered by [Lightcast](#)