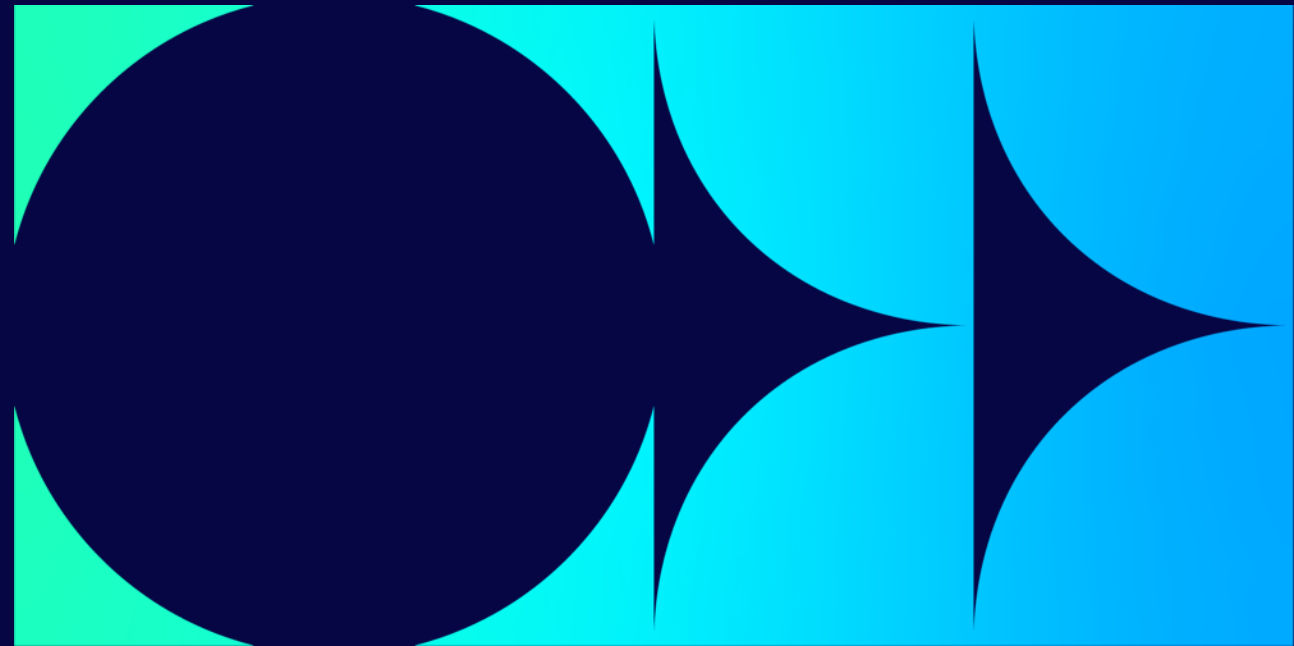


Mapping the STEM Careers Landscape

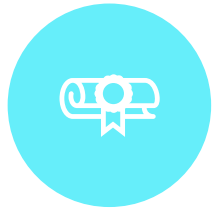
Fiona Munday

OU Careers and Employability Services

February 2024



If you've ever asked yourself....?



WHAT CAN I DO WITH
MY DEGREE IN....?



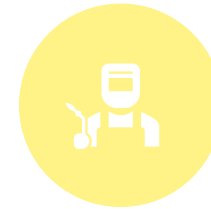
HOW DO I KNOW IF I'VE
GOT THE RIGHT SKILLS
TO WORK IN....?



WHAT ARE MY
CHANCES OF GETTING
A JOB AS A....?



HOW MUCH COULD I
EARN IF I BECAME A....?

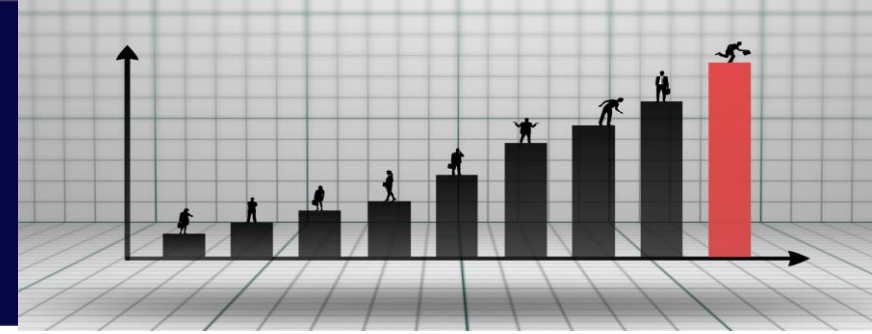


WHAT KIND OF JOB
VACANCIES ARE
AVAILABLE WHERE I
LIVE....?



WHERE ARE THE 'HOT
JOBS' OF THE
FUTURE....?

Why and how can you use LMI?

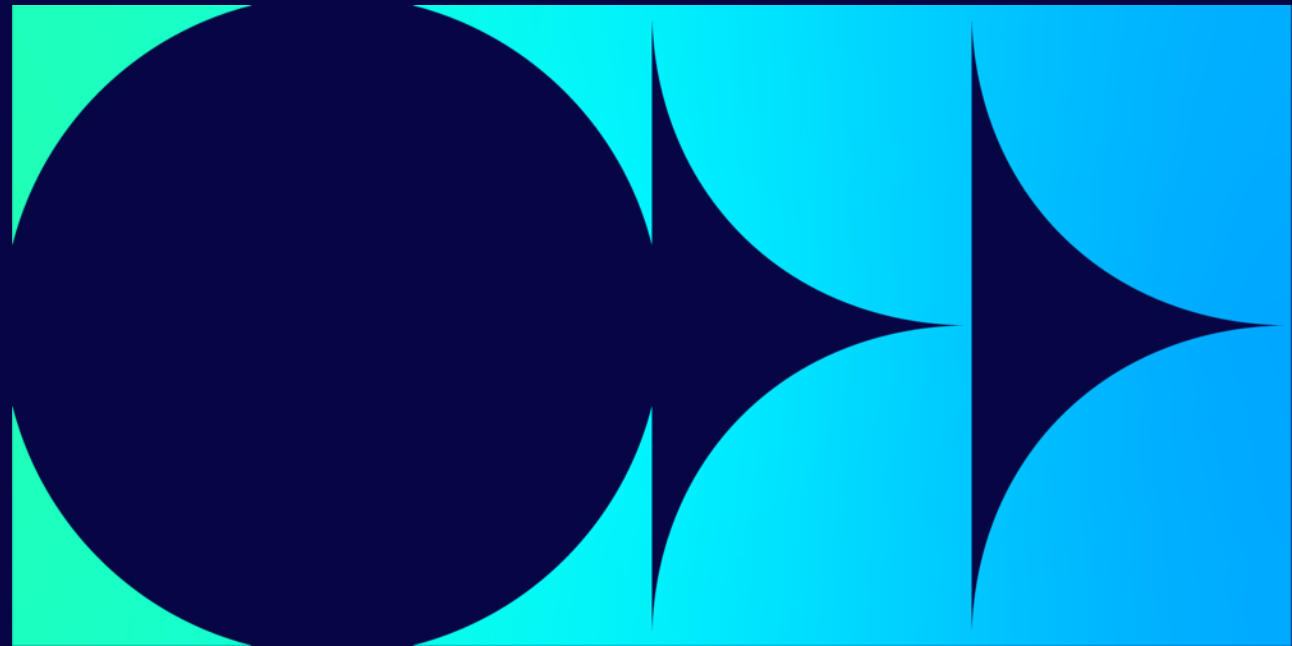


LMI usage	How it's useful in career planning and job search
Understanding job availability and outlook	Provides insight into growth/decline of sectors and roles, to gauge demand and prospects
Identifying in-demand skills	Indicates skills highly sought after by employers to guide upskilling
Salary benchmarks	Research wage ranges for jobs to manage expectations and negotiations
Supporting retraining decisions	Shows changing skills needs to assess if retraining required for transitioning roles
Sourcing relevant vacancies and location-based job search	Find current job vacancies, provides local labour market trends to focus search where demand is highest

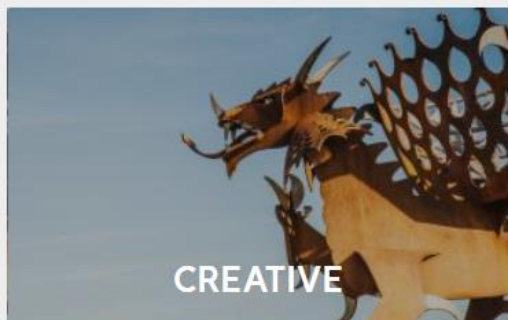
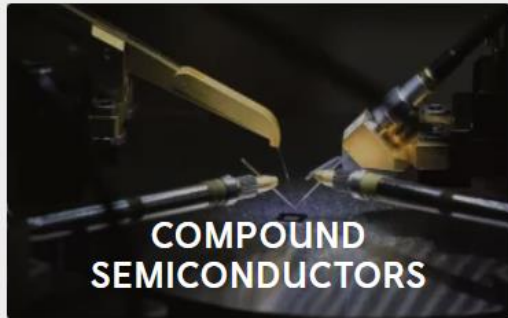
Wales

STEM LMI: Mapping the Careers Landscape

Laura Carter
Employability Manager for Wales



Key Sectors in Wales

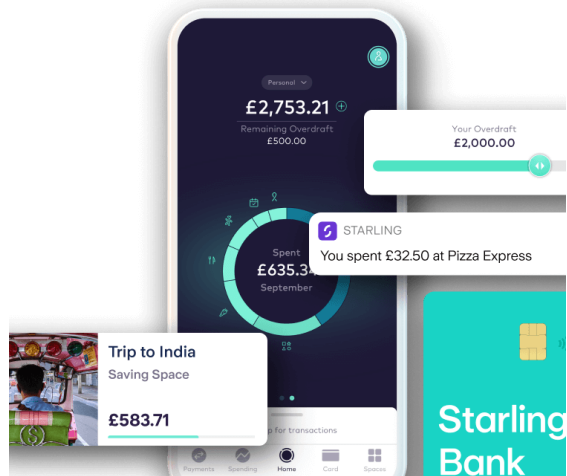
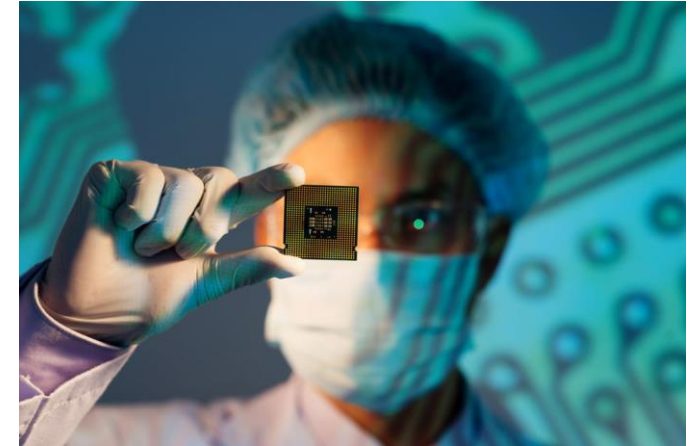


- 1 IN 5 NEW JOBS ADVERTISED IN WALES ARE IN STEM (2022)
- BY 2035, 95% OF NEW JOBS IN WALES WILL BE AT GRADUATE LEVEL
- WALES WILL NEED OVER 400,000 GRADUATES TO FILL ROLES BY 2035
- ACROSS ALL SECTORS AND AREAS IN WALES, THERE IS A SHORTAGE OF STEM SKILLS

Spotlight key sectors in Wales

Compound semiconductors are integral to the development of smartphones, Wi-Fi, satellite communication systems and new technologies like 5G, driverless cars and AI.

There is a growing community of compound semiconductor businesses and activities in South Wales offering opportunities.

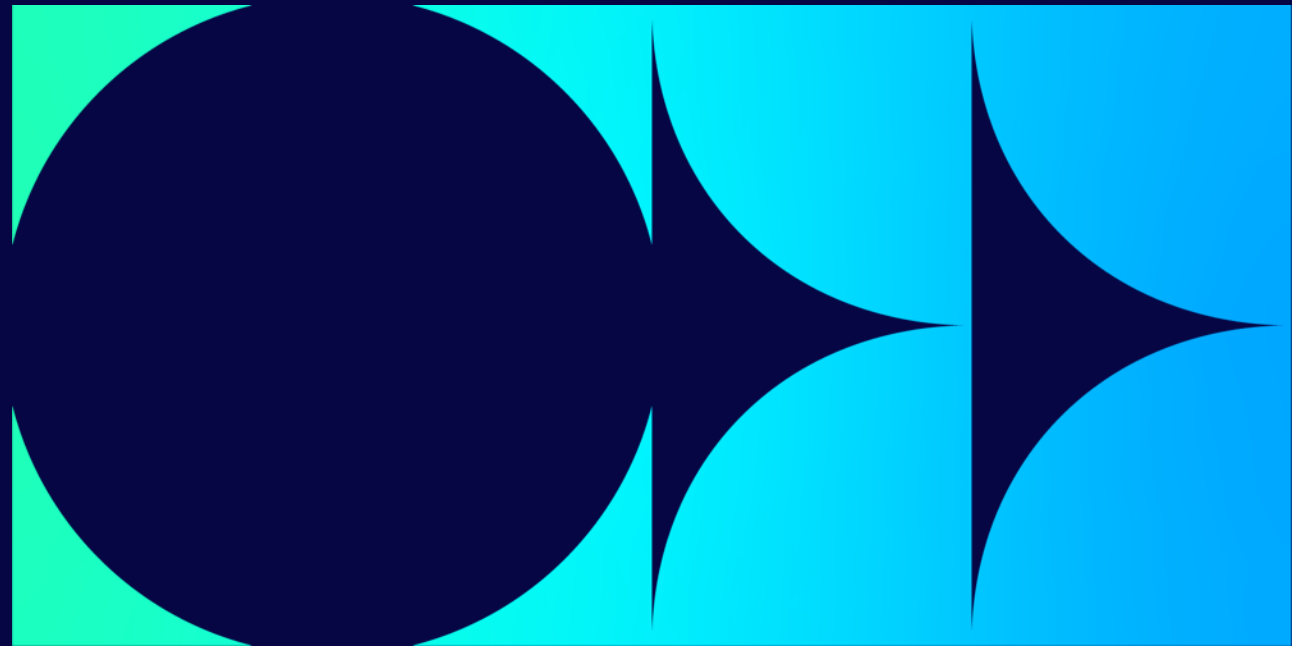


FinTech refers to the integration and use of different technologies by financial services, transforming traditional banking and financial processes – the most obvious being banking mobile apps.

Wales has the fastest growing digital economy outside of Wales with steady growth in finance and insurance services. It is estimated that over 1000 jobs were created in the FinTech sector in 2022 alone.

England STEM LMI: Mapping the Careers Landscape

Georgina Hawkins
Employer Engagement Manager for STEM



Spotlight on: Science in England

The Golden Triangle – London, Oxford & Cambridge

'Science Cities' :

- **Birmingham** – more MedTech companies than any other UK region
- **Bristol** – the greatest concentration of silicon-design businesses anywhere in the world outside Silicon Valley
- **Manchester** – the region accounts for around 23% of all life sciences employment in the UK
- **Newcastle** – has more than 200 life science companies that employ more than 7,000 people
- **Nottingham** – Home to Boots, Britain's largest retail pharmacy company and BioCity Nottingham the UK's largest bioscience innovation and incubation centre
- **York** – has more than 7,500 science-based businesses



Spotlight on: Technology in England

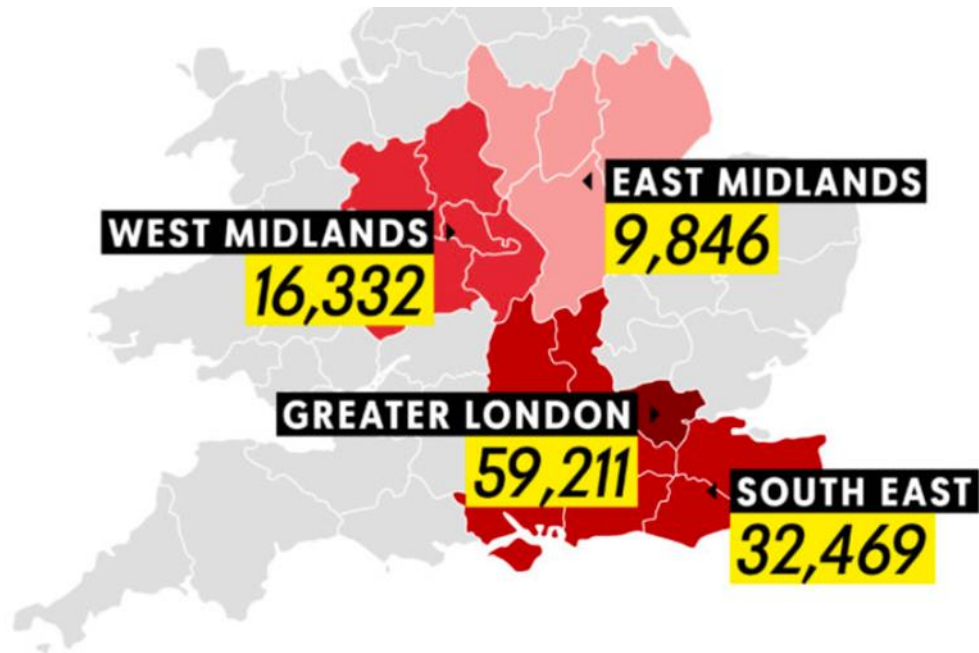
- IT and Tech has remained incredibly resilient and stable in 2023
- **3 million** extra jobs in tech are expected by 2025 in the UK
- The *UK Tech Town Index 2022* offers guidance on the best UK cities to live in and work in tech:
 - **Bristol** – over 37,000 jobs posted (21/22)
 - **Cambridge** – considered an AI hotspot
 - **London** – median tech wage £49,685
 - **Nottingham** – strong FinTech roots



Information from: <https://www.comptia.org/blog/top-uk-cities-to-live-in-and-work-in-tech> AND <https://www.uktech.news/partnership/regional-tech-jobs-outside-london-20231124>

Spotlight on: Engineering in England

Areas With the Largest Engineering Shortages (*April 2022*)



- More than **8.1 million** people – or over a quarter of all UK workers (26%) – are part of the nation's engineering economy

The UK has **729,000** engineering businesses – equivalent to more than one in 10 (13%) of all UK businesses

Technical engineers most sought after in East and West Midlands whereas **Development** and **Software** engineers most sought after in London and South East

Hotspots of engineering appear all over the UK, not just in major cities

Information from: <https://www.taylor-studwelding.com/blog/the-engineering-roles-most-in-demand#:~:text=Taylor%20Studwelding%20have%20explored%20the,for%20engineers%20across%20all%20sectors>.

AND <https://raeng.org.uk/news/a-hotbed-of-innovation-new-research-reveals-engineering-adds-up-to-an-estimated-645bn-to-the-uk-s-economy-annually>

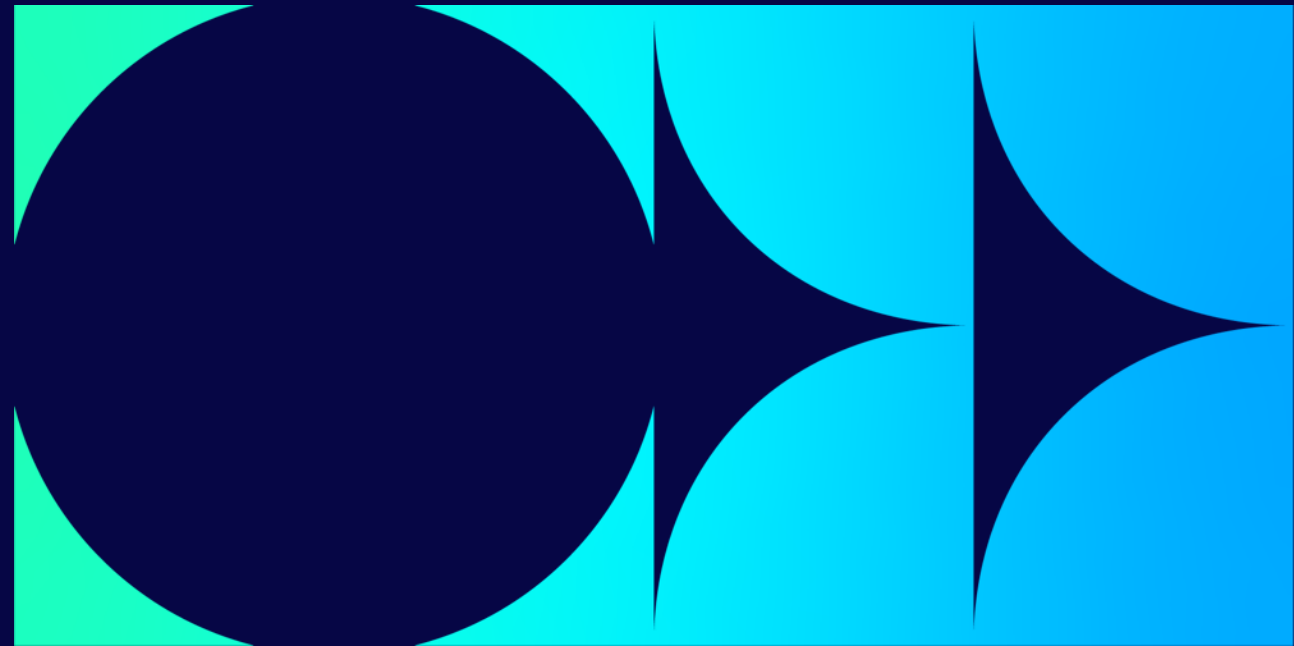
Northern Ireland

STEM LMI:

Mapping the Careers Landscape

Nicola Joyce

Employer Engagement Manager for Ireland

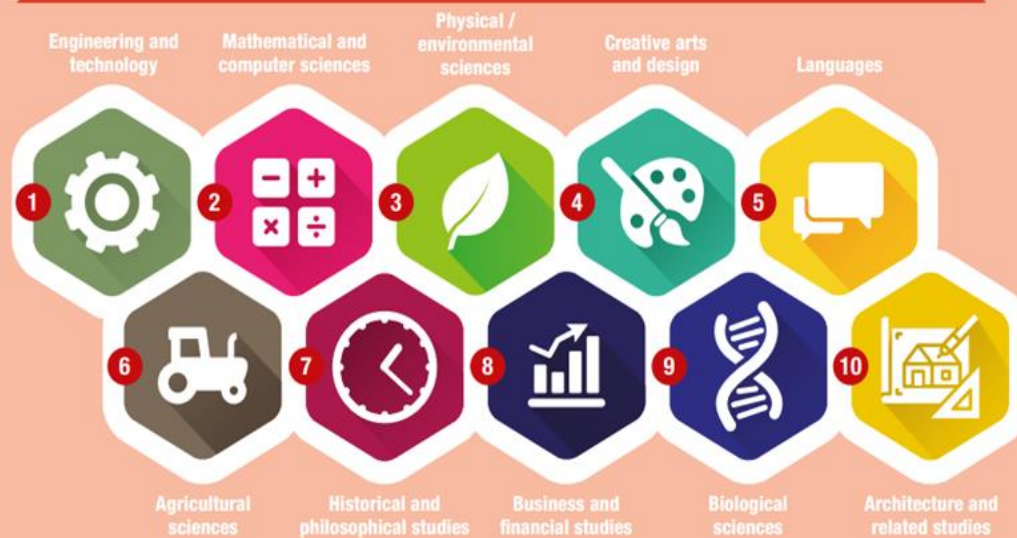


Northern Ireland STEM LMI

SUBJECTS IN DEMAND

STEM related subjects will be in most demand reflecting the anticipated growth in the ICT, professional services and advanced manufacturing sectors. STEM qualifications will also be demanded by a wider range of sectors across the economy.

More people needed with degrees in:



- STEM most undersupplied, particularly Engineering, Technology, Maths, Computer Science and Physical/Environmental Sciences.
- As the world becomes increasingly technology dependent it is anticipated that the range of businesses emerging in STEM will grow significantly.
- Top occupations for graduate online job advertisements in the 12 months to March 2023 were:
 - Programmers and Software Development Professionals (8%)

References: Northern Ireland Skills Barometer 2021 update | Department for the Economy(economy-ni.gov.uk)
Job opportunities for graduates - May 2023 | Department for the Economy (economy-ni.gov.uk)

Spotlight on Key Sector in Northern Ireland: Software



- Fastest growing tech sector in the UK & Belfast is Europe's leading FDI destination for new software development.
- Employs around 23,000 people across 2,200 companies & contributes an estimated £1.7 billion to the economy each year.
- High demand software skills, range of career opportunities offering attractive salaries & progression.
- Software development plays huge role in the financial services & fintech industry; healthcare & life sciences, as well as the advanced manufacturing sector.

Spotlight on Key Sector in Northern Ireland: Software



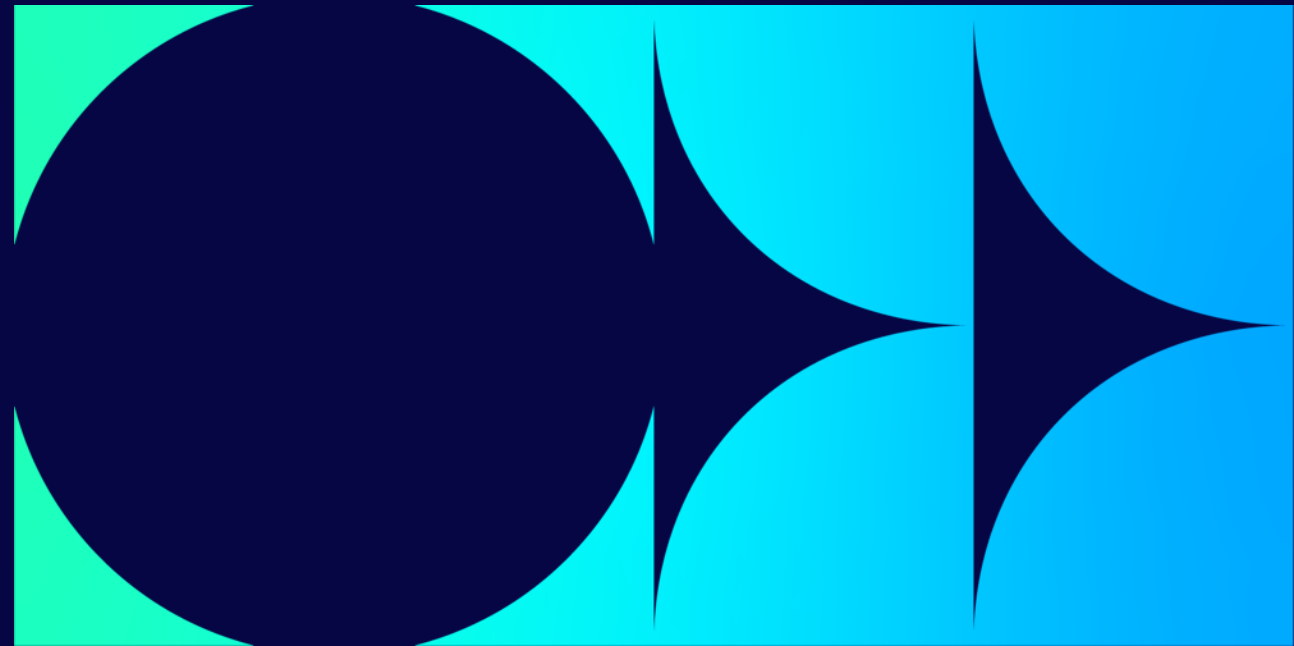
- Global technology leaders, such as Fujitsu, SAP & Microsoft established business operations. Locally owned firms Kainos, STAT Sports, & FD Technologies are exporting internationally.

OU Graduate Garrett switched from working in the automotive industry to software development. Garrett says,

"the main skills employers look for in software developers are mathematical aptitude, problem solving skills, programming languages, accuracy and attention to detail."

Scotland STEM LMI: Mapping the Careers Landscape

Joanna Glenfield
Employer Engagement Manager for Scotland



Scotland: Digital Technology Sector

FinTech, NatureTech, RetailTech, TravelTech, Climate Tech, FoodTech, MedTech

Employment in the Sector



- 2023 – 87,200 people employed
- 83% expect to increase headcount
- 15,600 new digital tech jobs annually
- 81% looking to hire graduates

Average Salary



£55K
per annum



75% of workers are educated to SCQF Level 7 and above

Skills in highest demand



- Cyber security
- Data - python
- AI
- Software Development – SQL, Javascript
- Cloud

Growth Sectors



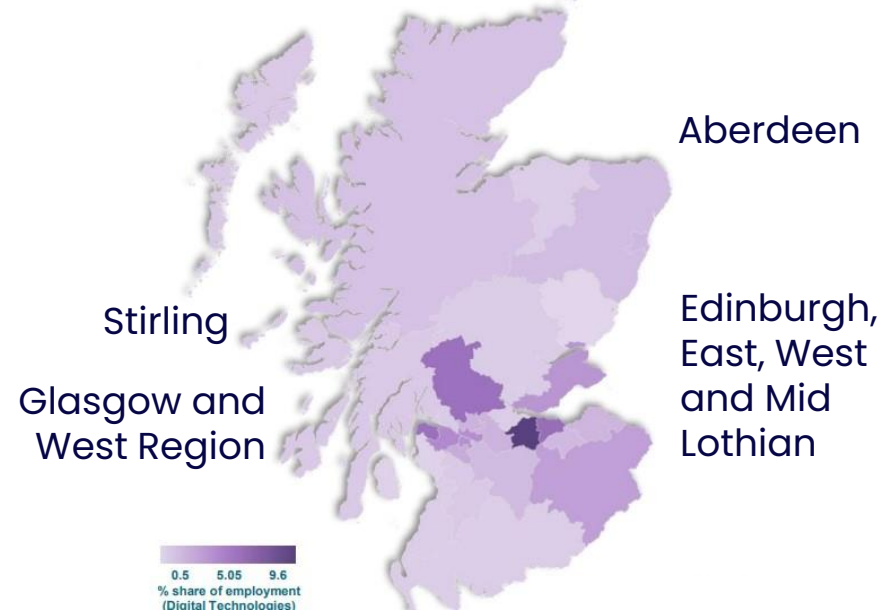
- Public Sector
- Financial Services – FinTech
- IT/Telecoms
- Third/Social Enterprise Sector

Gender Diversity



70% men
30% women

Employment by region



Spotlight on... Data Analysts

Between January 2023 and June 2023, there were **600 job postings**

Top Locations:

- **Edinburgh City**
250 job postings
- **Glasgow City**
240 job postings
- **Aberdeen City**
20 job postings

Specialised skills and knowledge:

- Problem Solving and Analysis
- Data Modelling and Management
- Data Visualisation
- Business Intelligence Software



Spotlight on... Programmers and Software Developers

Between January 2023 and June 2023, there were **8,100 job postings**

Top Locations:

- **Glasgow City**
3,200 job postings
- **Edinburgh City**
2,700 job postings
- **Aberdeen City**
500 job postings

Specialised skills and knowledge:

- Software Engineering and Development
- Agile Methodology
- Programming Languages
- Web Design and Development

References: [Sectoral Skills Assessments – Skills Development Scotland](#) and [ScotlandIS Technology Industry Survey – ScotlandIS](#)

Scotland: Engineering Sector

Manufacturing: Aerospace and Defence, Renewables, Space, Other Equipment

Employment in the Sector



- 2023 – 135,700 people employed
- 2033 – expected to grow by 5,300 people
- Accounts for 5.2% of all Scottish employment
- 81% looking to hire graduates

Gender Diversity

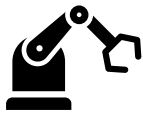


81% men
19% women



60% of workers are educated to SCQF Level 7 and above

Skills in highest demand



- Problem solving
- Data and AI
- Robotics
- Project Management
- Technical skills – electronic and mechanical

Employment by region



Between January 2023 and June 2023, there were **4,900** job postings for Engineering Technicians

Top Locations:	Specialised skills and knowledge:
Glasgow City 1,000 job postings	<ul style="list-style-type: none"> • Maintenance and Repair
Aberdeen City 700 job postings	<ul style="list-style-type: none"> • Engineering
Edinburgh City 600 job postings	<ul style="list-style-type: none"> • Project Management • Critical Thinking and Problem Solving
Median real-time advertised salary: £33,000*	



20% of all UK space jobs are located in Scotland

[Space Sector Skills Survey 2023 Report - GOV.UK \(www.gov.uk\)](https://www.gov.uk)



Over 100,000 new jobs will be created in the green sector

[UK regional view - Green Careers Hub](#)



Construction – 19,550 workers to be recruited each year to 2027

[csn-lmi-scotland.pdf \(citb.co.uk\)](https://www.citb.co.uk/csn-lmi-scotland.pdf)

Spotlight on... Conservation and Environment Professionals

Between January 2023 and June 2023, there were **590** job postings

Top Locations:	Specialised skills and knowledge:
Glasgow City 180 job postings	<ul style="list-style-type: none"> • Project Management
Edinburgh City 140 job postings	<ul style="list-style-type: none"> • Environmental Resource Management • Environmental Consulting
Aberdeen City 40 job postings	<ul style="list-style-type: none"> • Environmental Impact Assessment
Median real-time advertised salary: £40,100*	

Scotland: Science Sector

Life, Health and Chemical Sciences

Employment in the Sector



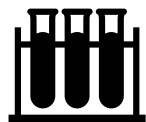
- 2023 – 27,400 people employed
- 2033 – 24,900 decline in employment

Strength Areas



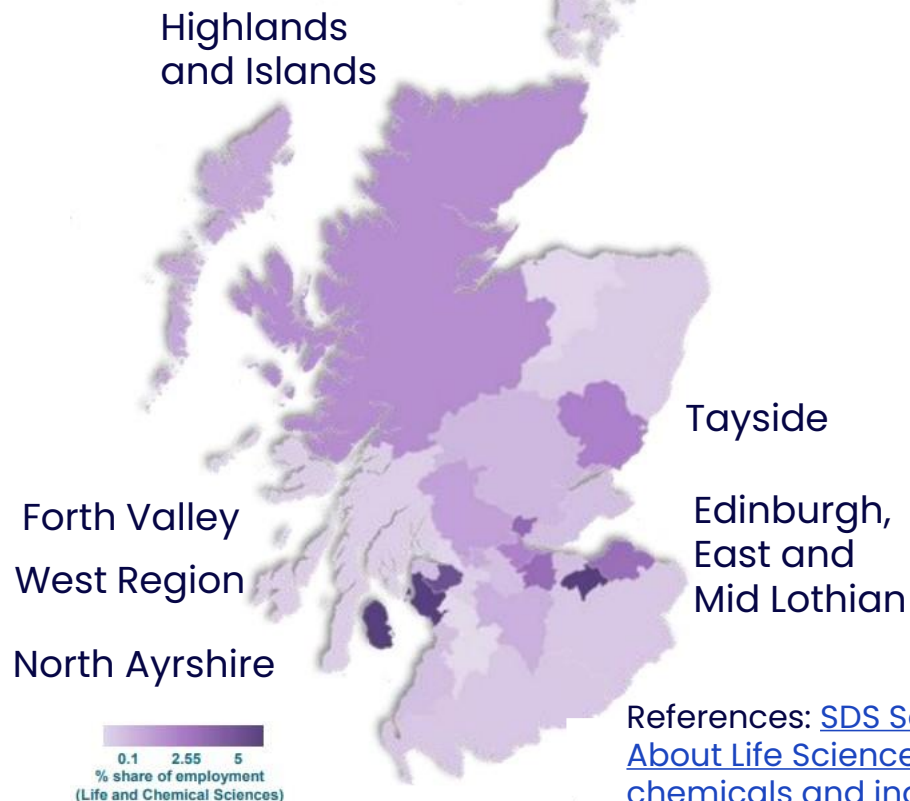
- Pharma services
- Industrial BioTech
- Digital Health
- Medical devices
- Precision Medicine
- Animal health
- Aquaculture
- AgriTech

Skills in highest demand



- QC, QA and Regulatory
- Laboratory technician
- Process **manufacturing**
- Commercial, project management and business development
- Digital – Data, AI, prediction and modelling

Employment by region



53% of workers are educated to SCQF Level 7 and above

Spotlight on... Biological Scientists and Biochemists

Between January 2023 and June 2023, there were **1,100 job postings**

Top Locations:

- **Edinburgh City**
410 job postings
- **Glasgow City**
380 job postings
- **Aberdeen City**
70 job postings

Specialised skills and knowledge:

- Ecology, Biology and Microbiology
- Biomedical Sciences
- Project Management
- Data Analysis
- Python - Programming Language

Spotlight on... Laboratory Technicians

Between January 2023 and June 2023, there were **330 job postings**

Top Locations:

- **Glasgow City**
90 job postings
- **Edinburgh City**
70 job postings
- **Aberdeen City**
30 job postings

Specialised skills and knowledge:

- Good Laboratory Practiced
- Quality Management Systems
- Laboratory Research
- Clinical Research and Trials
- Data Analysis

References: [SDS Sectoral Skills Assessment Life and Chemical Sciences](#), [About Life Sciences in Scotland - Life Sciences Scotland](#), [Scotland's chemicals and industrial biotech industry opportunities \(sdi.co.uk\)](#)

What next? Resources and tools

[Industry Reports](#)

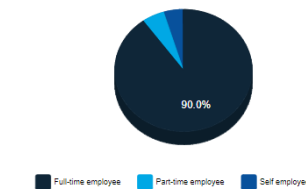
[LMI tool](#) ***NEW***

[OpportunityHub](#)

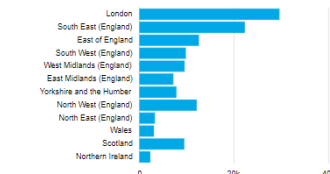
[OpenLearn course – Guide to labour market information](#)



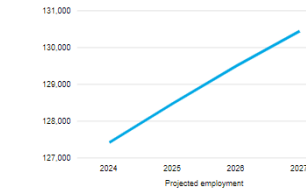
EMPLOYMENT STATUS
IT business analysts, architects and systems designers



REGIONAL EMPLOYMENT
IT business analysts, architects and systems designers



FUTURE EMPLOYMENT
IT business analysts, architects and systems designers



REGIONAL AVERAGE PAY
IT business analysts, architects and systems designers

