Mapping the STEM Careers Landscape

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OU Careers and Employability Services
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If you’ve ever asked yourself....?
Why and how can you use LMI?

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


‘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

Spotlight on: Engineering in England

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.
Northern Ireland STEM LMI: Mapping the Careers Landscape

Nicola Joyce
Employer Engagement Manager for Ireland
• 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.

References: https://syncni.com/article/10612/the-software-alliance-launches-as-the-voice-of-northern-ireland-s-1-7-billion-software-industry
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."

Reference: Careers Service – Careers Occupational Information Unit Bulletin Software Careers (economy-ni.gov.uk)
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

Skills in highest demand

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

Average Salary

£55K per annum

Employment by region

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

Growth Sectors

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

Gender Diversity

70% men
30% women

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

Skills in highest demand
- Problem solving
- Data and AI
- Robotics
- Project Management
- Technical skills - electronic and mechanical

Over 100,000 new jobs will be created in the green sector
UK regional view - Green Careers Hub

Gender Diversity
- 81% men
- 19% women

20% of all UK space jobs are located in Scotland


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

csn-lmi-scotland.pdf (citb.co.uk)

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

Spotlight on... Conservation and Environment Professionals
Between January 2023 and June 2023, there were 590 job postings
References: SDS Engineering Sector Skills Assessment
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**