



Energy & Environment



Welsh Government define the sector as:

Energy generation & use



Renewable energy



Emerging low carbon energy & technologies



Environmental goods & services



WORKPLACES

No. of individual workplaces in sector in 2017

1,225 in Flintshire
Highest in North Wales



25% increase in Wrexham
Largest growth over the past 3 years



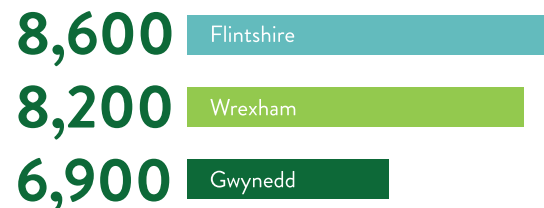
EMPLOYMENT

16,789 People employed in specialist energy & environmental companies in North Wales in 2016

63.3% Increase of people employed in sector in Denbighshire from 2014 - 2017



Employment in 2017



Apprenticeship programmes within North Wales in 2016/17



FURTHER EDUCATION

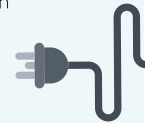
Further Education

Learning activities in North Wales 2016/17



Areas of study for Energy & Environmental

- Agriculture
- Construction
- Geography
- STEM



Higher Education

First, full time degrees in 2017/18

Bangor University

495	Physical Sciences
185	Engineering

Glyndŵr University

90	Physical Sciences
235	Engineering

There is a need for skilled employees with new investment in low carbon economy areas, including energy generation.

Future priorities:

- Offshore wind, solar and sustainable marine renewables – Morlais and Minesto are currently at the forefront of development of tidal energy technology in Anglesey. "Deep green technology has a global potential."
- Clean Transport and the roll out of electric vehicles. SP Energy Project Charge is an 38.5m trailblazer trial in the region as pilot
- Exploring potential of alternative fuels such as hydrogen
- Rural low carbon heating

DID YOU KNOW?

Wales' first nuclear research centre opened at Bangor University in 2017. The Nuclear Futures Institute has established two research centres at Bangor University, making North Wales a global centre in nuclear technology.

Working Futures

13,000 PEOPLE will be required to replace those leaving or retiring from the sector in North Wales up to 2024 within the sector.

Food & Farming

WORKPLACES

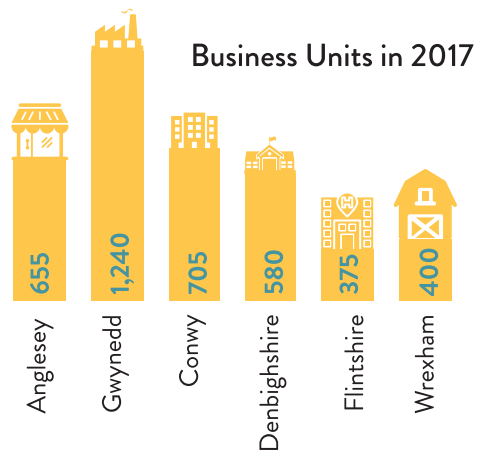


Food & Drink industry and its supply chain

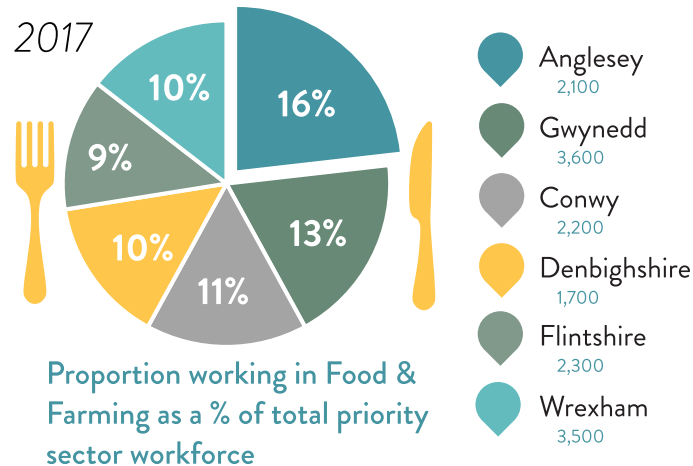
- Primary production
- Food & drink manufacturing
- Catering & Hospitality
- Wholesale & Retail

What is the best advice you could give to a young person wanting to get into your industry?

Genus plc (based in Llanrydd, Ruthin):
"Join a local young farmers group, providing the opportunity to form a network of contacts in the agricultural industry, and use this to gain experience and knowledge of many aspects of the industry".



EMPLOYMENT



WORKING FUTURES

46% of employers say their workforce needs and uses Welsh at work

4 Occupations in Demand

- Skilled Trades
- Professional
- Process, Plant and Machine Operatives
- Chefs

67% of employers are facing skills challenges

BREXIT

Brexit will pose significant challenges for the food and farming industry, including increased costs, exporting/importing difficulties, and funding.

FURTHER EDUCATION

Apprenticeship programmes within North Wales in 2017/18



Learning activities in FE in North Wales in 2017/18

515	in agriculture
325	in horticulture & forestry
1,810	in hospitality & catering

DID YOU KNOW?

Diversification into food & manufacturing has become an increasingly important source of income for the farming industry.



Increase in those qualified at QCF Levels 4-6 from 2014 to 2024

+69.9%

There will be +16.1% for levels 7-8

1,000

Job openings for process, plant & machine operatives in food & farming from 2014 to 2024

1,000

Job openings for elementary occupations in food & farming from 2014 to 2024



Financial & Professional



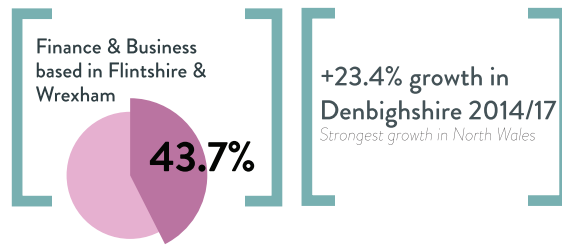
WORKPLACES

Definition

The financial and professional services sector makes a substantial contribution to the region, both directly as a key source of employment allied to employment in the Foundation Economy, but also indirectly as a key source of employment and investment by providing specialist services to businesses across all sectors.

Main Business Activity:

- Accountancy
- Insurance
- Legal services
- Corporate and 'head office' functions
- Human resources
- Professional services



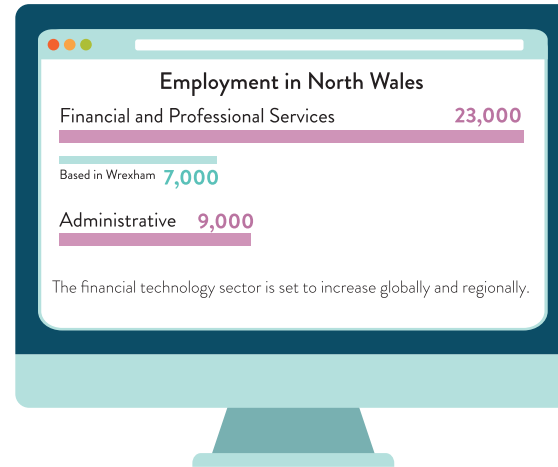
11,385 Businesses in North Wales, 2017

95% dominated by Micro Businesses (employ < 10)

- Moneysupermarket
- Money Penny
- HSBC
- Development Bank of Wales
- HM Revenue and Customs



EMPLOYMENT



WORKING FUTURES



People will be working in sales and customer service occupations in North Wales by 2024

55% increase in demand for those qualified at QCF Levels 4-6 in the sector by 2024

BREXIT

More than two thirds of finance and related professional jobs are based in London, however increased digital automation and digital services are leading to declines in financial services employment in some regions and uncertainty surrounding Brexit could amplify this trend.



FURTHER EDUCATION

Learning Activities

In FE in North Wales



Business and Administration route has the largest number of students in both FE and HE

Bangor University is ranked 25th in the world for research in the field of banking.

Glyndwr University launched a FinTech Degree in 2017, the first of its kind in the UK.

140 Accounting apprenticeships programmes in North Wales in 2017/18

DID YOU KNOW?

-Moneypenny look for good speed and accurate typing skills, at least 35 words per minute. There are lots of free typing practice and tests online.

-Just over 1,000 people work for the Crown Prosecution Service and Ministry of Justice in North Wales.

Employer Skills Survey

44% of employers are facing challenges in recruitment, staff development, reduced funding and competition.

30% of businesses in financial and professional services had the issue of staff retention

25% Said work readiness is an issue for – poor attitudes and low motivation being the top explanation.

Top Tips

When reviewing a candidate's CV or application we look for customer service experience, administrative experience, team player, good grammar and spelling.

Money Penny, Wrexham

Employers report a need to invest and upskill staff with higher levels of digital skills and telecommunications skills to keep up to date with new technology and grow their market and customers.



Advanced Manufacturing

Definition

Advanced Materials and Manufacturing are industries that increasingly integrate new innovative technologies in both products and processes with the relevant technology being described as "advanced," "innovative," or "cutting edge".

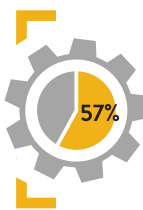
Subsectors of significance in North Wales are:



- Aerospace
- Automotive
- Chemical and pharmaceutical
- Engineering and precision engineering
- Opto-electronics
- Food and drink
- Metal and steel

WORKPLACES

1,425 manufacturing businesses in North Wales
27.4% of manufacturing businesses in Wales



businesses based in Flintshire

+23.5% increase in local units in Conwy 2014 - 2017
Strongest growth in North Wales

EMPLOYMENT



36,000 people work in the sector in North Wales

203 postings for production workers in North Wales in 2018-2019

136 postings for welder/solderer

6,000 Approx. employees at Airbus

Most employ up to 50 people and a third of these are micro businesses

Efforts needed to attract more women

Top Tips

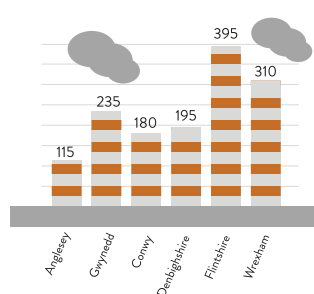
Roles include scientists, computer programmers, digital designers, welders, machinists, experts in sales, marketing and advertising. It's a great industry to demonstrate and use your STEM skills and qualifications.

Working Futures

580 Professionals & Associate Professionals required per annum, up to 2022

8,000 Replacement demand up to 2024
38% of the workforce are aged 50+

Businesses in North Wales in 2018



Employer Skills Survey

The professional skills shortage include project managers, quality control specialists, process engineers, lean management, logistics management, and engineering drawings

FURTHER EDUCATION



Students are studying engineering and technology degrees in North Wales

Increased demand by employers for higher level qualifications at Level 4+, HNDs and postgraduate

970 Studied in FE in 2017/18

A new £20 million Advanced Manufacturing Research Institute is being built in Broughton - AMRC Cymru, and will open its doors in Autumn 2019

"AMRC Cymru is a game-changer. It will ensure a thriving industry base that will be a catalyst for economic growth across the supply chain, increasing productivity and supporting competitiveness of Welsh industry at home and around the world."

-Ken Skates, Minister for Economy and North Wales

Advanced technologies and Industry 4.0 demand new skills such as robotics, AI, VR, AR, cyber security

Will bring import/export challenges if a 'trade deal' is not agreed as well as the threat of increased costs generally and possible new trade tariffs.

310 new apprentices started a manufacturing engineering apprentice programme in 2017-18

100 new apprentices started programmes in food manufacturing in 2017-18

DID YOU KNOW?

BREXIT

Construction



WORKPLACES

11,930

Enterprises in
North Wales in 2017

97.7% were micro-businesses

Gwynedd

2,800

Conwy

2,255



EMPLOYMENT

25,200

People employed in Construction
in North Wales in 2017



Primarily Male within the age
range of 40-55 years old

23% of the
Workforce

Examples of Employers

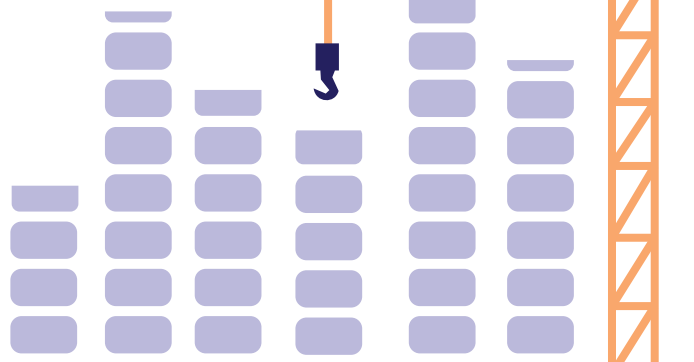
Wynne Construction (Bodelwyddan)
Read Construction (Wrexham)
Brenig Construction (Mochdre)
K&C Group (Kinmel Bay)
B&W Builders & Decorators Ltd (Kinmel Bay)
Brenig Homes (Mochdre)
Huws Gray (Head Office in Llangefni)

Employment
2014-2024

28,000
30,000
9,000
Replacement
Demand
+73% for QCF levels 4-6
+30.5% for levels 7-8

Business Sites Per County in 2017

100



EMPLOYER SKILLS SURVEY

Employer Challenges

Recruitment **71.4%**

Developing Staff **57.1%**

78% of employers facing
challenges in these areas:

Professional Occupations

-Architects
-Civil Engineers
-Surveyors

Skilled Trades

-Joiners, wood trades
-Plasterers
-Fencing

Efforts needed to attract more women



FURTHER EDUCATION

Apprenticeships

In the Construction Sector 2017/18

560 Level 2

490 Level 3 and higher

Areas of study in the highest demand

-Architects
-Civil Engineers
-Surveyors



[4,790] Learning Opportunities in
North Wales 2017/18

Brexit

The main issue facing employers is the
cost of exporting and importing. The
second highest issue is procurement of
services. Interestingly, only a small
proportion reported loss of skills and staff
as their issues/challenges with Brexit.



The key challenge to the future of the sector is the need to
upskill the current workforce, and new entrants with digital
skills. The introduction of new technologies and materials means
that employees will need to be adaptable and possess high level
IT skills including 3D modelling.

DID YOU KNOW?

Employers have problems recruiting architects, civil engineers and surveyors. In 2017/18, there were no full time first degree students enrolled in architecture, building and planning, and only 75 students enrolled at Glyndŵr University.



Foundation Economy



WORKPLACES

Definition

Business activities which provide the essential goods and services for everyday life.

Number of Business Units

North Wales 2018

- ✓ 1,915 Retail Trade
- ✓ 350 Education
- ✓ 1,780 Admin & Support Services
- ✓ 3,860 Agriculture, Forestry & Fishing
- ✓ 965 Transport and Storage



Top tips for getting into customer services

Money Penny (based in Wrexham):

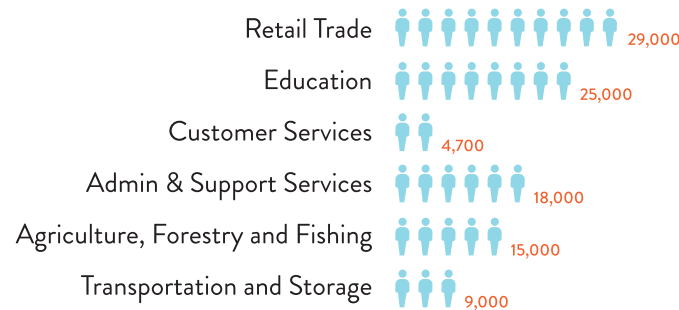
“The best tip I could give when job searching is making sure you have a great CV. It’s your first chance to make a great impression to any potential employers and it gives you a better chance of being considered. Especially if the employer receives a high volume of applications. You want to stand out! Making sure your CV is kept up to date and any gaps in employment are explained is also really important”.



EMPLOYMENT

Employees by Industry

North Wales 2018



WORKING FUTURES

50,000 Employees will be needed in the Retail Industry in 2024

Job Openings from 2014 to 2024

- 1,000 Agriculture
- 12,000 Education
- 6,000 Public Administration and Defence
- 9,000 Support Services
- 5,000 Transport and Storage
- 22,000 Wholesale and Retail Trade

Increase in those qualified at each QCF Level

- +14.3%** Agriculture - levels 4-6
- +14%** Education - levels 7-8
- +31.6%** Public Admin and Defence - levels 4-6
- +64.3%** Support Services - levels 4-6
- +70%** Transport and Storage - levels 4-6
- +87.1%** Wholesale and Retail Trade - levels 4-6



FURTHER & HIGHER EDUCATION

Learning Activities in FE in North Wales in 2017/18



Apprenticeships Programmes in North Wales in 2017/18

- 370** Customer Service
- 265** Retail
- 115** Warehousing and Storage
- 255** Supporting Teaching & Learning in Schools
- 750** Business & Administration
- 10** Agriculture
- 25** Horticulture
- 20** Transportation

BREXIT

Brexit will pose significant challenges for the retail industry, including increased costs, exporting/importing difficulties, and funding.

DID YOU KNOW?

The North Wales Growth Deal will see more than 4,000 direct and 10,000 indirect jobs created. There are 7 strategic programmes: low carbon energy, advanced manufacturing, land-based industries (agriculture and tourism), land and property, skills and employment, digital connectivity, and strategic transport.



✈️ Tourism & Hospitality

WORKPLACES

Economic Impact 2016

- Anglesey **£284.34m**
- Gwynedd **£1.01bn**
- Conwy **£839m**
- Denbighshire **£479m**
- Flintshire **£252m**
- Wrexham **£115.9m**

DID YOU KNOW?

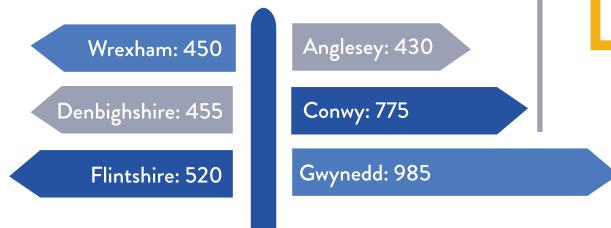
A 2018 study by North Wales Tourism calculated that Zip World has directly contributed over £251million to the North Wales economy since 2013.

What is the best advice you could give to a young person wanting to get into your industry?

Anglesey Sea Zoo:

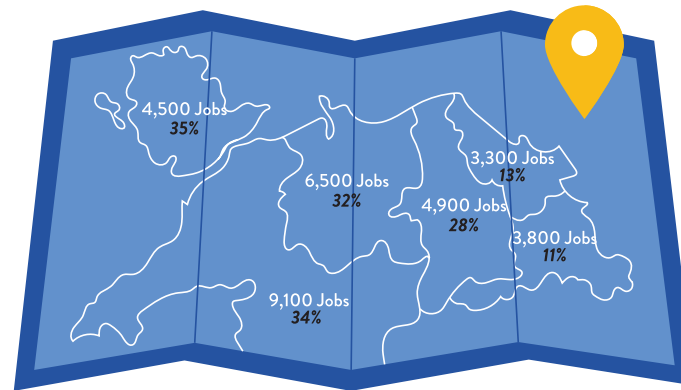
Get as much relevant experience as you can, when you're as young as you can and make sure you do background work and know your stuff, so that you stand out from the competition in any job market.

Business Units in 2017



EMPLOYMENT

Proportion working in tourism as a % of total priority sector workforce & Employment in 2017



Employer Skills Survey

48% of employers say their workforce needs and uses Welsh at work

60% of employers facing challenges. Mainly in these areas:

1. Recruitment
2. Seasonality
3. Making a profit
4. Perception of the sector
5. Poor transportation links

4 Occupations in Demand

- Caring, Leisure and Other Service Occupations
- Sales and Customer Service Occupations
- Skilled Trades Occupations
- Chefs

32% of employers said staff retention was an issue in leisure and tourism



FURTHER EDUCATION

Learning activities in FE in North Wales 2017/18



1,405
Sports
& Leisure



150
Travel
& Tourism



1,810
Hospitality
& Catering

Apprenticeships programmes in North Wales in 2017/18



450
725

Leisure, Sport, and Travel
Hospitality

WORKING FUTURES

5,000 job openings for elementary occupations in tourism from 2014 to 2024

2,000 job openings for managers, directors and senior officials in tourism from 2014 to 2024

Increase at QCF levels 4-6 in tourism from 2014 to 2024 in North Wales

105.5%

Increase at levels 7-8 in tourism from 2014 to 2024 in North Wales

36.4%



Creative & Digital



WORKPLACES

Businesses in North Wales 2017

Digital Skills: specialism in computer programming and information services

Creative skills: specialism in publishing, film, TV, radio, advertising and design

- Creative and Digital jobs are found in all other sectors, e.g. marketing in manufacturing, programming in education, advertising in retail etc.
- There is an increase in demand for digital skills across the board (design, test, buy, sell, manufacture, train, recruit and support staff and products)

Businesses in North Wales 2017

Flintshire	25.3%
Gwynedd	20.9%

Strongest Growth Between 2014 and 2017

Flintshire	↑ 23.5%
Anglesey	↑ 20%
Denbighshire	↑ 20%

160

companies in the TV, media and film subsector, with a strong cluster of Welsh broadcasting companies in Gwynedd.



EMPLOYMENT



8,500

Working in creative industries, North Wales 2017

57% are micro businesses

Top Tips

-The multi-disciplinary mix of science and arts is precisely what creative and digital businesses are crying out for. The 'User Interface' and 'User Experience' of mobile devices and games needs creativity as well as scientific ability.

-Innovation is a major driving force in the industry, especially the need for 'diagonal thinking' that brings creativity and entrepreneurship together.

-Welsh Creative Media companies operate in a global marketplace and the industry sees this as a great opportunity

Employees by Industry

North Wales 2017

7,000 Computer Programming

800 Telecommunications

700 Information Service

1,000 Publishing Industry
40% of the total workforce in publishing in Wales

£569.20 Gross weekly earnings for the creative industries were the third highest out of the priority sectors

BREXIT

Brexit poses a threat of increased costs and possible lack of funding streams and opportunities.

DID YOU KNOW?

-Creative jobs will be more resistant to automation and artificial intelligence. 87% of creative workers are at a low or no risk of automation.

-Jobs in arts, crafts and design occupations are generally associated with higher levels of wellbeing.

-There is a strong case for creativity to fall into the STEM priority initiatives and change this to STEAM (A=Arts).

-The Welsh Government invested £30 million in the development of film and television projects in Wales between 2014 and 2019.



FURTHER EDUCATION

Learning Activities in North Wales in 2017/18

3,785

Arts, Media & Publishing

3,300

Information Technology

Apprenticeships Programmes in North Wales 2018

225

IT Users, IT Software, Web, Telecom Routes

34

Creative first degrees offered in Bangor & Glyndwr Universities in 2018

1040 students studying these courses

68%

of the Creative workforce has a degree level qualification



WORKING FUTURES

+43.8%

QCF Qualified Level 4-6 in Creative Industries North Wales 2014 to 2024



2,000

Employment Increase in North Wales by 2024

1,000

Replacement Demand

57%

Report skills shortages in: Digital, IT, Art Department, Costume Department, Production Department, and Sound Technicians

50%

of recent employer survey respondents state the Welsh language is needed at work



Health & Social Care

WORKPLACES

Definition

Health and social care is provided by the NHS via Betsi Cadwaladr University Health Board (BCUHB), Social work and social care provided by the six local authorities, and the health and social care services they commission to the independent sector.

Businesses in North Wales

1,245 are Micro Businesses (employ < 10)



84 GP Practices



374 Residential, day and care home providers



1,100 Child Care Settings

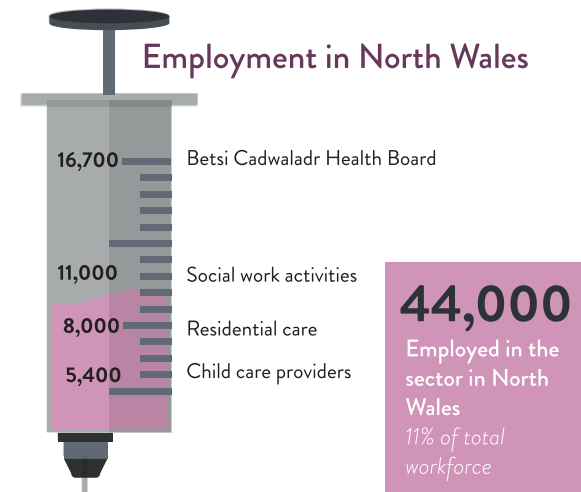
People Betsi Cadwaladr provides health services to **678,000**

Spent by BCUHB in 2017/18 **£1.47b**

Top Tips

There are over 350 health roles in BCUHB alone, not counting the wider range of social care roles and settings. Young people need to change their perceptions of the sector and widen their understanding and knowledge of the sector.

EMPLOYMENT



WORKING FUTURES

Employer Skills Survey

66% of employers say that Welsh language is a crucial skill



FURTHER EDUCATION

Apprenticeships Programmes

in North Wales in 2017/18



40
Dental Nursing



10
Pharmacy services



1,335
New starts in the sector

7,000+

Different learning activities in FE colleges and HE in the region linked to H&SC

Bangor University started a new course in 2018 affiliated to medicine

New postgraduate fast track to nursing and midwifery available in Bangor University

BREXIT

Brexit will pose significant challenges for the industry, in particular staff recruitment and retention in some roles.

DID YOU KNOW?

Innovation in technology will transform the sector in 10 years. Telemedicine and implants that could eliminate the effects of epilepsy and Alzheimer's; bio-printers that will be able to print new organs! In Japan, robotics are already assisting in elderly health care.