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Llywodraeth Cymru
Welsh Government

0713 Welsh Apprenticeship Pathway

in

Plumbing and Heating

The content of this Pathway has been agreed by the expert Steering Group facilitated by BSE Skills. This is the only Plumbing & Heating Apprenticeship Pathway in the Building Services Engineering sector approved for use in Wales that is eligible for Welsh Government funding.

More Information can be obtained from:

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LEARNING PROGRAMME CONTENT

The Learning Programme provision shall comprise of three mandatory elements:

- Qualifications,
- Essential Skills
- On/off the job training

The total minimum credit value required for the Level 3 Pathway (Plumbing and Heating) is 140 credits.

ENTRY REQUIREMENTS

This Apprenticeship is suitable for learners who:

- are aged 16+ currently working in the trade area
- have passed all relevant sector specific entry assessment (where appropriate)
- have achieved one or more of the following (or recognised equivalent):
 - Foundation in Construction and the Built Environment qualification at Level 2
 - Progression in Building Services Engineering qualification at Level 2*
 - Welsh Baccalaureate National Diploma
 - GCSE grade A-C in each of the following:- a communication subject, maths and either a science or technical-based subject (e.g. Design & Technology, Electronics etc)
 - GCSE grade A-C in WJEC GCSE Built Environment
 - Level 2 'Access to Building Services Engineering' qualification and/or equivalent qualifications*

*This qualification may be considered as a proxy for the Foundation and Core qualifications during the transition period which runs 31 December 2023.

APPRENTICESHIP PATHWAY LEARNING PROGRAMME(S)

Level 3: Plumbing and Heating

Qualifications

Participants must achieve the following *knowledge* and the *combined* qualification(s) below.

Level 2 - Core in Construction and Building Services Engineering					
Awarding Body	Qualification No.	Credit Value	Total Qualification Time	Competence / Knowledge / Combined	Qualification Assessment Language(s)
City & Guilds	C00/4414/0	41	410	Knowledge	English-Welsh

Please note that any learner who has already achieved either the Foundation in Construction and the Built Environment qualification at Level 2 or Progression in Building Services Engineering qualification at Level 2 or achieved a Level 2 or 3 Certificate or

Diploma in the trade in which the apprenticeship is to be undertaken will not be required to undertake/achieve the Core.

Level 3 - Plumbing and Heating					
Awarding Body	Qualification No.	Credit Value	Total Qualification Time	Competence / Knowledge / Combined	Qualification Assessment Language(s)
EAL	C00/4278/7	140	1400	Combined	English or Welsh

Essential Skills Wales (ESW)

Essential Skills Wales qualifications assessment languages are English-Welsh.

Level 3: Plumbing and Heating	Level	Minimum Credit Value
Communication	2	6
Application of Number	2	6
Digital Literacy	2	6

Note that evidence for Essential Skills can/should be gathered holistically and from other activities so as not to remove learning time from the main trade areas.

On/Off the Job Training (guidance only)

Pathway	Minimum On the Job Training Hours	Minimum Off the Job Training Hours
Level 3: Plumbing and Heating	5520	1380

These hours may be different for experienced/older workers depending on their industry experience. The hours cover learning and development undertaken in a range of settings, including in the workplace when under the direction of a relevant trainer, e.g. workplace mentor. Centres and employers should work closely together in determining what proportion of the training will take place within centres and in workplace settings.

OTHER ADDITIONAL REQUIREMENTS (Mandatory)

Learners will be required to complete **one** of the optional routes from:

1. Fossil Fuel – Natural Gas (this aligns to IGEM IG1 and ACS assessment standards)
2. Environmental Technologies (this aligns to MCS requirements)

These options are shown in more detail below:

Option	Knowledge	Skills	Specific Requirement
1. Fossil Fuel – Natural Gas	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances.	Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances.	Learner should complete a training package through a formal Managed Learning Program approved by IGEM to IG 1 Standards of training in gas work and complete both of the following ACS Assessments (as a minimum): <ul style="list-style-type: none"> • Core Domestic Gas Safety - CCN1 • Central Heating Boilers & Water Heaters - CENWAT
2. Environmental Technologies	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on solar thermal, heat pumps and water recycling systems.	Select, install, test, commission, service and maintain solar thermal, heat pumps and water recycling systems.	Learner should complete training to MCS025 and include both of the following*: <ul style="list-style-type: none"> • Heat Pumps to MIS3005 • Solar Thermal to MIS3001

*One route must be achieved through on-site evidence.

Additional Requirement Detail (Minimum Credit & Hours)

Domestic Plumbing and Heating (Gas-Fired Water and Central Heating Appliances)

Qualification Total: 1034 hrs (Knowledge elements 266 hrs + Competence elements 768 hrs)

Estimated minimum total Training hours for this pathway: 1308 hrs

Environmental Technologies

Qualification total: 549 Training hours (Knowledge elements 91 hrs + Competence elements 458 hrs)

Estimated Minimum total Training hours for this pathway is 823 hrs

Notes

- In addition to these hours we would encourage further practice take place in the work place.
- Apprenticeships should normally require employment of at least 30 hrs per week as part of their Apprenticeship Agreement.
- All training hours must be delivered during contracted working hours under an Apprenticeship Agreement or during a period less than 5 years before the date of application for an Apprenticeship certificate.

JOB ROLES

This Apprenticeship is designed to provide individuals with the opportunity to develop the skills and knowledge that are needed to carry out the installation and/or maintenance of hot and cold water, central heating, drainage and weathering systems in commercial, industrial and residential buildings including all relevant:

- Technological requirements and changes
- Statutory and Non- Statutory Regulations & Requirements
- Working practices in accordance with Health and Safety requirements
- Inspection, testing and commissioning procedures
- Work on Electrical Systems associated with plumbing systems

On completion of the requirements in this Pathway the Apprentice should, as a minimum, have the core skills and core knowledge required to carry out the following in a safe and competent manner:

- Apply health and safety and environmental legislation in the building services engineering sector
- Establish and maintain relationships in the building services engineering sector
- Coordinate a work site in the building services engineering sector
- Perform electrical work on mechanical building services systems
- Install and test plumbing and heating systems
- Service and maintain plumbing and heating systems
- Inspect and pre-commission plumbing and heating systems
- Commission plumbing and heating systems
- Decommission plumbing and heating systems

In addition, the Apprentice should also be able to:

- Apply professional judgement and support
- Challenge unsafe behaviours/activities
- Demonstrate innovation through the identification of areas for improvement and suggestion and/or development of innovative solutions
- Identify and manage risks to self and others
- Keep work area clean and tidy
- Manage own time effectively
- Think logically and accordance with the demands of the situation using clear and valid reasoning when making decisions to undertake the work instructions
- Work effectively individually and in a team
- Work in accordance with quality requirements
- Work productively
- Work safely and ensure the safety of others
- Work within own level of competence and know when to seek advice from others

Throughout the Apprenticeship process the Apprentice should, as a minimum, develop and display the behaviours that show them to be consistently:

1. Assertive
2. Confident
3. Dressed appropriately
4. Empathetic
5. Fair
6. Honest

7. Proactive
8. Productive
9. Punctual
10. Reliable
11. Respectful (in terms of equality, diversity and inclusion)

It is anticipated that successful learners will progress within the Plumbing & Heating industry in qualified positions such as employed or self-employed, supervisors, managers. Continuous learning will be expected of the qualified candidates in order to maintain awareness of the regulations impacting on the industry and technological changes/advances.

PROGRESSION

The aim of this Pathway is to ensure that the successful learners gain:

- The Skills and Knowledge required by the industry to achieve competence
- Job related skills that will be used in the working environment
- Knowledge and skills aligned to working practices, relevant statutory and non-statutory regulations
- Transferable and Core Skills
- The basis for career progression

When apprentices have completed this Pathway, they have a number of progression options to them including:

- Vocational: develop self in the role and seek promotion
- Academic: use the qualifications gained as the basis for further study and entry to Further or Higher Education as appropriate
- Combination of Vocational and Academic: undertake part time study while still working. This may be as part of a structured Higher Level Apprenticeship (HLA) if this is relevant/available.

More specifically, on successful completion of this Apprenticeship in Plumbing and Heating an apprentice will be furnished with the skills and knowledge, and have the qualifications to:

- Register with the JIB-PMES at <https://www.jib-pmes.org/>
- Seek registration/recognition with the appropriate fuels related body e.g. Gas Safe, OFTEC, HETAS or MCS
- Progress in their career with further training into such job roles as Technician, Designer, Estimator, Project Manager, Site/Workshop Supervisor/ Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Learners may also wish to consider adding to their skills profile by completing one or more of the following developmental routes:

1. Fossil Fuel – Oil (this aligns to OFTEC requirements)*
2. Fossil Fuel – Solid Fuel (this aligns to HETAS requirements)*

***These are optional only (i.e. NOT a mandatory part of the Apprenticeship)**

In more detail:

Option	Knowledge	Skills	Specific Requirement
1. Fossil Fuel –Oil	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic oil storage, pipework and appliances	Select, install, test, commission, service and maintain domestic oil storage, pipework and appliances	Learner should follow the relevant OFTEC training route (or equivalent) for all of the following: <ul style="list-style-type: none"> • OFT10-101 - Single stage pressure jet servicing and commissioning • OFT10-201 - Multistage pressure jet servicing and commissioning • OFT10-600a - Installation of oil fuel storage and supply systems connected to fixed combustion appliances
2. Fossil Fuel – Solid Fuel	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic solid mineral fuel, wood burning and biomass appliances	Select, install, test, commission, service and maintain domestic solid mineral fuel, wood burning and biomass appliances	Learner should follow the relevant HETAS Training route (or equivalent) for all of the following: <ul style="list-style-type: none"> • H002 – Solid Fuel Regulations & Standards • H003 HETAS Dry Appliance Installer Course • H004 Wet Appliance Installer Course • H005DE – HETAS Biomass Installer –

Further career guidance can be found at <https://www.aphc.co.uk> and www.snipef.org

It is anticipated that successful candidates will progress within the Plumbing & Heating industry in qualified positions such as employed or self-employed, supervisors, managers.

Continuous learning will be expected of the qualified candidates in order to maintain awareness of the regulations impacting on the industry and technological changes/advances.

Also whilst this sector doesn't currently have a 'Licence to Practice' our apprenticeships are recognised as fulfilling the competence requirements of the voluntary card schemes and will enable you to register on a relevant industry recognised Certification Scheme which is

evidence that an operative is deemed competent to carry out a particular job role effectively and safely.

EQUALITY & DIVERSITY

It is important that apprenticeship Pathways are inclusive and can demonstrate an active approach to identifying and removing barriers to entry and progression. Pathways should advance equality of opportunity between persons who share protected characteristics and those persons who do not as identified in the Equality Act 2010.

The protected characteristics identified in the Equality Act are age, disability, gender re-assignment, race, religion or belief, sex, sexual orientation, pregnancy and maternity. Marriage and civil partnership is also included although only in respect of the requirement to eliminate discrimination in employment.

Training providers and employers **MUST** also comply with the other duty under the Equality Act 2010 to ensure that applicants are not discriminated against in terms of entry to the industry based upon those nine protected characteristics.

The Plumbing and Heating Industry has not, historically, been a traditional career choice for women. However, women do qualify and work successfully in the industry and this is encouraged.

The sectoral bodies work at local, regional and national levels to identify and address issues around equality and diversity. This work is supported by local/national government, non-governmental bodies/agencies and relevant Unions.

It is a requirement that apprentice recruitment is open and fair to all who meet the selection criteria, regardless of gender, ethnic origin, religion/belief, sexual orientation or disability.

All partners involved in the delivery of the apprenticeship and employers must be committed to a policy of equal opportunities and must have a formal equal opportunities policy and procedure in place.

Employers/providers must be able to demonstrate that there are no overt or covert discriminatory practices in selection and employment. All promotional, selection and training activities must comply with relevant legislation such as the Equality Act 2010.

Providers will monitor equality of opportunity practice and procedures within their own organisation and take positive action when necessary. It is also recommended that employers/providers conduct an exit interview if the apprentice leaves the programme before completion.

EMPLOYMENT RESPONSIBILITIES AND RIGHTS (ERR)

Employment Responsibilities and Rights (ERR) is no longer compulsory. But it is recommended that all apprentices (especially the 16 years -18 year group) receive a company induction programme.

RESPONSIBILITIES

It is the responsibility of the Training Provider and Employer to ensure that the requirements of this pathway are delivered in accordance with the Welsh Government Apprenticeships Guidance.

Further information may be obtained from:

Welsh Government

DfES-ApprenticeshipUnit@gov.wales