

Apprenticeships +

Plumbing and
Domestic Heating
Technician

Apprenticeship
Level 3





Quick Information

New Apprenticeship Standard designed by employers for employers

Sector

Construction

Who is it for?

New Recruits and Existing Staff

Start date

Planned Sept Start Date

Level

Level 3

Duration

48 months (this does not include EPA period)

How does it work?

One day a week at college for 48 months with on site visits throughout by assessors.

Content

Designed to cover knowledge, skills and behaviours.

Assessment

End of Year Exams, Practical Assessment NVQ on-site portfolio and Gas Portfolio

Qualification

Plumbing and Domestic Heating Technician Apprenticeship

Additional qualifications

Plumbing & Heating Qualification at Level 3 – Gas Option

Review

3 years

Plumbing and Domestic Heating Technician

Fitting and servicing domestic water, heating and drainage systems

Generic job titles recognised across the industry

- Plumber
- Domestic Heating Engineer Domestic Heating Installer
- Plumbing and Domestic Heating Installer
- Plumbing and Domestic Heating Engineer

Occupational profile

Plumbing and Domestic Heating Technicians plan, select, install, service, commission and maintain all aspects of plumbing and heating systems. Plumbing and domestic heating technicians can find themselves working inside or outside a property. Customer service skills and being tidy and respectful are important qualities as they can often find themselves working in customers' homes as well as on building sites.

As a competent Plumbing and Heating Technician, the installation of plumbing and heating systems includes accurate measuring, marking, cutting, bending and jointing metallic and non-metallic pipework. Appliances and equipment can include gas, oil and solid fuel boilers as well as pumps, heat emitters, bathroom furniture or controls as part of a cold water, hot water, and central heating or above ground drainage and rainwater systems. Plumbing and Domestic Heating Technicians are at the forefront of installing new and exciting environmental technologies like heat pumps, solar thermal systems, biomass boilers and water recycling systems. It is important for a plumbing and heating technician to be able to work independently or as a team and use their knowledge and skills to ensure that both the system and appliances are appropriately selected and correctly installed, often without any supervision, and done so in a safe, efficient and economical manner to minimise waste.



Key Areas of Study

The apprentice will cover essential knowledge, skills and behaviours on their programme, as set out below.

Knowledge and Understanding

Health and safety

Understand health and safety legislation, codes of practice and safe working practices

Core plumbing systems

Understand selection, planning, installation, testing, commissioning and de-commissioning, service, maintenance, fault diagnosis and repair techniques on cold water, hot water, central heating, above ground drainage and rainwater systems

Electrical components and control systems

Understand installation and testing techniques for electrical components and control systems on plumbing and domestic heating systems

Plumbing science and processes

Understand scientific plumbing, domestic heating and mechanical principles

Principles of environmental technology systems

Understand the principles of domestic mechanical environmental technology systems

Principles of fossil fuels

Understand the principles of fuel combustion, ventilation and fluing arrangements within a domestic environment

Customer service

Understand the principles of high quality customer service and establishing the needs of others (colleagues, customers and other stakeholders). Respect the working environment including customer's properties

Communication

Understand different communication methods, how to communicate in a clear, articulate and appropriate manner and how to adapt communication style to suit different situations

Skills

Safe working

Operate in a safe working manner by adhering to health and safety legislation, codes of practice and applying safe working practices

Core plumbing system techniques

Apply selection, planning, installation, testing, commissioning and de-commissioning, service, maintenance, fault diagnosis and repair techniques on cold water, hot water, central heating, above ground drainage and rainwater systems

Electrical components and control systems techniques

Apply installation and testing techniques for electrical components and control systems on plumbing and domestic heating systems

Supervisory skills

Take responsibility for own work and safety and welfare of others. Oversee and organise the programme of work and work environment. Carry out work and manage resources in an environmentally friendly manner

Option 1 (Fossil Fuel – Natural Gas)

Knowledge

Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances

Skills

Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances

Behaviours

Honesty and Integrity

Develop trust with customers and colleagues by undertaking responsibilities in an ethical and empathetic manner

Dependable and responsible

Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence

Enthusiasm and positive attitude

Demonstrate drive and energy in fulfilling requirements of role

Quality focus

Be quality focussed in work and in personal standards

Willingness to learn

Identify own development needs and take action to meet those needs. Keep up-to-date with best practice. Maintain and enhance competence

Work with others

Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public

Sustainable working

Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors

Link to professional registration:

By the end of this apprenticeship the candidate will have satisfied the requirements for registration as EngTech by the Engineering Council through The Chartered Institute of Plumbing and Heating Engineering (CIPHE) and or The Chartered Institute of Building Services Engineers (CIBSE).

On completion of the health and safety assessment, as determined, by the assessment plan the candidate will have satisfied the requirements to obtain a Construction Skills Certification Scheme (CSCS) Card through the Joint Industry Board for Plumbing and Mechanical Engineering Services (JIB-PMES) at the appropriate grade.



Apprentice Entry Requirements

Typically, apprentices will have English and Mathematics at level 2 on entry, and all will have achieved that level prior to taking their end-point assessment. It will be a requirement that the newly developed Level 3 Plumbing and Domestic Heating Qualification is achieved prior to taking the end-point Assessment.

Progression Opportunities

Level 3 and 4 Building Services Engineering Further Registrations in the following competent person schemes:
Unvented Hot Water Storage Systems
WIAPS.

More Information

To find out more about the opportunities and financing of apprenticeships and to discuss your particular requirements, please email apprenticeshipsandtraining@sheffcol.ac.uk or call **0114 260 2600** to speak to one of our friendly employer advisors.

Get In Touch

Email

apprenticeshipsandtraining@sheffcol.ac.uk

Call

0114 260 2600

Twitter

@ShefcolAppsPlus

Facebook

facebook.com/ShefColAppsPlus

LinkedIn

linkedin.com/company/the-sheffield-college



Why choose The Sheffield College?

As one of the region's largest providers of apprenticeships, The Sheffield College is more than just your local provider; we deliver the dedicated support you need to source, train and get the best out of your apprentice.

We appreciate how difficult and time consuming it can be to recruit suitable staff. That's why we will source, shortlist and prepare candidates before you meet them.

We help you get the best deal by finding the right funding and we handle the paperwork to make the process of arranging an apprenticeship training programme as smooth as possible. Our employer partnership team, apprenticeship tutors and assessment staff are experts, and we invest time and money in training and upskilling them regularly so their knowledge is up-to-date and industry standard.

At The Sheffield College we go above and beyond; we know that every business is different and we help to develop apprentices who will meet the needs of your business.

Training, Tutoring and Assessment

We are committed to delivering a course that facilitates the students need to progress in education to allow them to expand their knowledge and experience to help with the opportunity of promotion within their own companies.

Our expectations are that the student fully engages with the course programme, allocating sufficient time with their studies at college and self directed studying and with the full support of their employers.

End Point Assessment

The knowledge element of the end point assessment has two components: Multiple Choice Test and Design project.

Multiple Choice Test (Underpinning Knowledge Assessment) – a global assessment made of 50 questions, multiple-choice, each with one correct answer and three distractors, centrally set and centrally marked. The knowledge areas will be selected from an assessment bank that covers the full knowledge range, as specified in appendix 2 of this Assessment Plan. This examination will have a maximum time of 90 minutes.

Design Project (Applied Knowledge Assessment) – taking 7 hours' duration, in an assessment centre. Building plans are provided to the apprentice with a job specification, manufacturer's information and data, British Standards and regulations. The apprentice is asked to complete a heating, hot water and cold water design capable of meeting the job specification. The apprentice will then produce:

- Design criteria
- Completed fabric heat loss
- Heating pipework sizing
- Hot and cold water sizing
- Final layout plans
- Materials list
- Merchant order

The performance element has two components: the Practical Installation Test and the Practical Application Test.

Practical Installation Test (Underpinning Skills Assessment) – will see Apprentices complete the fabrication of a pipework frame, utilising different materials and pipework components with various jointing techniques. The assessment marking criteria will include overall performance and soundness, quality of manufacture and tolerances of $\pm 2\text{mm}$. This assessment should be completed within 6 hours.

Practical Application Test (Applied Skills Assessment) – will be carried out in an assessment centre within a secure bay. The apprentice will inspect a pre-installed unvented cylinder, functioning with electrical components and controls. The assessor will make alterations to the system to create faults on various components within the system. The apprentice is then given 2 hours to identify the faults and repair then re-commission the system. Finally, the apprentice will complete a service on the unvented system, according to manufacturer's instructions, this will be undertaken within 1 hour.