



# Level 2 Diploma in Foundation Plumbing and Heating



## Bpec level 2 Plumbing and Heating Course

This course is primarily for those with no knowledge of plumbing and heating and includes both theory and practical work. The course is structured as a series of modules and runs on a “roll on roll off” basis which enables students to join at the start of any module. It is run on a Tuesday and Thursday evening from 6-9pm. This course costs £3,300 plus VAT (50% due up front, 50% halfway through). The duration of this course is around 12 months.

The level 2 course includes the following topics:

- 🔥 Understand and carry out safe working practices in building services engineering
- 🔥 Understand and apply domestic hot water system installation and maintenance
- 🔥 Understand and apply domestic above ground drainage system installation and maintenance techniques
- 🔥 Install and maintain domestic heating systems.
- 🔥 Health & Safety
- 🔥 Job Planning/Time management
- 🔥 Environmental/Waste management
- 🔥 Science Principles
- 🔥 Site Preparation and Pipework (Copper, plastic, & low carbon steel)
- 🔥 Domestic Cold Water System Installation & Maintenance
- 🔥 Domestic Hot Water System Installation & Maintenance
- 🔥 Domestic Central Heating System Installation & Maintenance
- 🔥 Domestic Rainwater System Installation & Maintenance (Guttering)
- 🔥 Domestic Above Ground Drainage System Installation & Maintenance (Waste pipes)



## **Health and Safety (HS) assessments**

Covering unit:

J/602/2479 Safe Working Practices in Building Services Engineering

### **Manual Handling**

The assessment requirements:

The learner is required to complete the following three tasks:

- Lift a load (suggested size 600mm x 600mm) and transport it down a pre-determined route
- Use a two man lift to load a sack barrow then transport the sack barrow down a pre-determined route
- Transport a load down a pre-determined route using a two man lift

### **Electrical Safety**

The assessment requirements:

The learner is required to complete the following three tasks:

- Safely isolate a fixed item of electrical equipment using the industry safe isolation procedure
- Inspect electrical power tools before use and report on their condition
- Apply temporary electrical continuity bonds before removal of metallic pipework



### **Gas Heating Equipment**

The assessment requirements:

The learner is required to complete the following three tasks:

- Transport gas bottles safely within the work area and assess components/equipment for safety
- Perform the safe assembly of gas heating equipment
- Demonstrate the safe use of a fire extinguisher to extinguish a small solid fuel fire

### **Access Equipment**

The assessment requirements:

The learner is required to complete the following two tasks:

- Safely assemble, erect and use step ladders and ladders
- Safely assemble, use and dismantle a mobile tower scaffold



## **Pipework Fabrication (PF) assessment**

Covering unit:

D/602/2682 – Understand how to carry out site preparation, and pipework fabrication techniques for domestic plumbing and heating systems

### **Copper Pipework**

The assessment requirements:

The learner is required to complete the fabrication of the pipework assembly detailed in the BPEC assessment drawing PFD-1. The assembly must be completed using all the specified jointing methods/techniques and be in accordance with the following criteria:

- Learner must assess drawing PFD-1 and complete a materials list for the pipework and fittings required
- Learner must select appropriate pipework clips for use and space them correctly
- All measurements must be within  $\pm 2\text{mm}$  of those specified in PFD-1
- Pipe bends must be free from ripples, throating or excessive distortion
- Soldered joints must be free from excessive solder and residual flux
- Completed pipework must be leak free and capable of withstanding hydraulic test
- Health and safety requirements must be observed at all times



## **Bathroom Installation (Cold Water, Hot Water, Central Heating and Sanitation)**

### **Bathroom Installation (BA) assessments**

Covering units:

1. D/602/2682 – Understand how to carry out site preparation, and pipework fabrication techniques for domestic plumbing and heating systems
2. J/602/2921 – Understand and apply domestic sanitation system installation and maintenance techniques

The assessment requirements:

The learner is required to complete the installation of the bathroom suite detailed in the BPEC bathroom assessment drawings BD-1, BD-2 and BD-3. The installation must be completed using appropriate jointing methods/techniques and be in accordance with the following criteria:





- Learner must assess drawings BD-1, BD-2, BD-3 and complete a materials list for the pipework and fittings required
- Learner must complete a list of tools required for completion of the assessment
- Learner must use the available drawings to plan out the installation
- Pipework is positioned and passed through joists/structures correctly
- The final positioning of the appliances is not fixed and will be determined by the centre's spatial accommodation – learners must ensure that all appliances are installed in line with industry requirements and guidance, are fixed level and secured and are correctly dressed
- Radiator must be installed level and plumb and must be connected up to copper supply pipework from boiler jig
- All pipework should be laid plumb and true
- All clips should be positioned and fixed in accordance with industry requirements
- Completed pipework must be leak free tested in accordance with appropriate British Standard tests
- Completed installation must be fully tested to industry standards and any faults rectified
- Health and safety requirements must be observed at all times

### **Cylinder Cupboard Installation (Cold Water, Hot Water)**

Covering Units:

1. H/602/2697 – Understand and apply domestic cold water system installation and maintenance techniques
2. F/602/2884 – Understand and apply domestic hot water system installation and maintenance techniques



The assessment requirements:

- The learner is required to complete the installation of a cold water storage cistern, hot water storage cylinder and thermostatic shower valve as detailed in the BPEC cylinder cupboard assessment drawing CC-1. The installation must be completed using appropriate jointing methods/techniques and be in accordance with the following criteria:
  - Learner must assess drawing CC-1 and complete a materials list for the pipework and fittings required
  - Learner must complete a list of tools required for completion of the assessment
  - Learner must use the available drawings to plan out the installation
  - Learner must mark out and drill a plastic cistern
  - Pipework is positioned and passed through joists/structures correctly

- The final positioning of the cylinder, cistern and valves is not fixed and will be determined by the centre's spatial accommodation – learners must ensure that all components are installed in line with industry requirements and guidance, are fixed level and secured
- Cylinder must be installed level and plumb on secure footing
- Cistern must be installed level and plumb on secure footing
- Valves and components must be installed correctly
- All pipework should be plumb and true
- Any required clips should be positioned and fixed in accordance with industry requirements
- Completed pipework must be leak free tested in accordance with appropriate British Standard tests
- Completed installation must be fully tested to industry standards and any faults rectified
- Health and safety requirements must be observed at all times

### **Radiator Installation (Central Heating - LCS)**

Covering Unit:

Y/602/2888 – Understand and apply domestic central heating installation and maintenance techniques

The assessment requirements:

The learner is required to complete the installation of the radiator and LCS pipework arrangement in the BPEC radiator assessment drawings RD-1 and RD-2. The installation must be completed using appropriate jointing methods/ techniques and be in accordance with the following criteria:



- Learner must assess drawings RD-1 and RD-2 and complete a materials list for the pipework and fittings required
- Learner must complete a list of tools required for completion of the assessment
- Learner must use the available drawings to plan out the installation
- Learner must select appropriate pipework clips for use and space them correctly
- All measurements must be within +/-2mm of those specified in RD-1
- Pipe and fittings are free from tool and vice marks
- Malleable iron fittings show no more than 1 ½ threads
- Completed pipework must be leak free and capable of withstanding hydraulic test
- Pipework is positioned and fixed correctly
- The final positioning of the radiator and pipework must be in accordance with the datum line but can be determined by the centre's spatial

accommodation – learners must ensure that all components are installed in line with industry requirements and guidance, are fixed level and secured

- Radiator must be installed level and plumb and securely fixed
- Radiator valves and components must be installed correctly
- All pipework should be plumb and true
- Any required clips should be positioned and fixed in accordance with industry requirements

## **Rainwater Installation and Maintenance**

### **Rainwater systems (RW) assessments**

Covering unit:

F/602/2917 – Understand and apply domestic rainwater system installation and maintenance techniques

The assessment requirements:

- The learner is required to complete the installation and maintenance of the rainwater system arrangement as specified in the BPEC assessment drawings RWD-1 and RWD-2. The installation must be completed using appropriate jointing methods/ techniques and be in accordance with the following criteria:
- Learner must assess drawings RWD-1 and RWD-2 and complete a materials list for the pipework and fittings required
- Learner must complete a list of tools required for completion of the assessment
- Learner must use the available drawings to plan out the installation
- Guttering brackets are fixed to confirm correct fall
- Pipework and guttering is positioned and fixed correctly
- All pipework should be plumb and true to within  $\pm 2^\circ$
- Pipework clips and brackets should be positioned and fixed in accordance with industry requirements
- Completed installation must be fully tested to industry standards and any faults rectified
- Maintenance activities (visual inspections and replacement of components) are completed safely
- Health and safety requirements must be observed at all time



## **Cold Water; Hot Water; Central Heating and Sanitation Systems Maintenance**

### **Maintenance (MA) assessments**

Covering units:

1. H/602/2697 – Understand and apply domestic cold water system installation and maintenance techniques
2. F/602/2884 – Understand and apply domestic hot water system installation and maintenance techniques
3. Y/602/2888 – Understand and apply domestic central heating installation and maintenance techniques
4. J/602/2921 – Understand and apply domestic sanitation system installation and maintenance techniques



The assessment requirements:

- The learner is required to complete visual inspections checks and identified maintenance procedures on identified cold water; hot water; central heating and sanitation systems. The work must be completed using appropriate maintenance methods/ techniques and be in accordance with the following criteria:
- Learner must assess support documents (maintenance record + manufacturer's instructions)
- Learner must complete the tasks as identified by the assessor to meet the requirements of the planned maintenance record
- Learner should be provided with a copy of a maintenance record (as per example) to work through – this will be provided as supplementary evidence, the assessor will record the results of the assessments on the appropriate maintenance recording form (also provided)
- The task can be completed on the finished bathroom installation or on a separate maintenance bay/rig designed by the centre

## **Cold Water; Hot Water; Central Heating and Sanitation Systems Decommissioning**

### **De-commissioning (DC) assessments**

Covering units:

1. H/602/2697 – Understand and apply domestic cold water system installation and maintenance techniques
2. F/602/2884 – Understand and apply domestic hot water system installation and maintenance techniques
3. Y/602/2888 – Understand and apply domestic central heating installation and maintenance techniques



4. J/602/2921 – Understand and apply domestic sanitation system installation and maintenance techniques

The assessment requirements:

- The learner is required to complete the de-commissioning of identified cold water; hot water; central heating and sanitation systems. The work must be completed using appropriate work methods/ techniques and be in accordance with the following criteria:
- Learner must complete the tasks as identified by the assessor to meet system decommissioning requirements
- The task is designed to be completed through the decommissioning of the cold water, hot water, central heating and sanitation systems that comprise finished bathroom installation (as per drawing BA-1)
- Alternatively the task could be combined with the maintenance activities (MA1-MA4)





To apply for the Level 2  
Plumbing and Heating  
Course fill out the  
attached application form  
and send it in, details at  
the bottom of the page.



ASSOCIATION OF PLUMBING  
& HEATING CONTRACTORS



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Tel 01993 771155

VAT 125657310

## Application Form

### Level 2 Diploma Plumbing and Heating Evening Course

#### Personal Details

Mr/Miss/Mrs/Ms/Other (delete as appropriate)

Family Name: \_\_\_\_\_ First Name: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode \_\_\_\_\_

Telephone  
(Day): \_\_\_\_\_

Telephone  
(Evening): \_\_\_\_\_

Mobile: \_\_\_\_\_

Email Address: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

National Insurance  
No: \_\_\_\_\_

#### Education

Please list any mechanical type qualifications you have already taken

#### Work Experience

Please describe any work experience in the plumbing industry

## Photograph Permission

Do you give your permission for photographs to be taken?	YES/NO
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## Declarations

Oxford Energy Academy Ltd collect information about our applicants for various administrative, government and teaching reasons. Due to the Data Protection Act 1998, we need your consent before we can do this. Since we cannot operate effectively without processing information about you, we need you to sign the following consent:

I have completed this form correctly to the best of my knowledge. I agree to Oxford Energy Academy processing personal data contained within this form. I understand that this information will only be used for the purposes set out in this declaration and my consent is conditional upon Oxford Energy Academy complying with their obligations and duties under the Data Protection Act 1998.

Signature: \_\_\_\_\_

Full Name: \_\_\_\_\_

Where did you hear about us? \_\_\_\_\_ Date: \_\_\_\_\_

When completed, please return this form to:

Donna Alsworth  
Oxford Energy Academy Ltd  
Avenue One  
Station Lane  
Witney  
OX28 4XZ

Or email [donna@oxford-energy-academy.co.uk](mailto:donna@oxford-energy-academy.co.uk)

## Health & Safety and Assessment Policy.

All operatives must attend wearing relevant clothing to carry out assessments safely, health and safety must be adhered to at all times.

All mobile phones to be turned off in assessment centre.

Any verbal or physical abuse of centre staff will end in termination.

Upon hearing fire alarm or CO alarm, operatives will evacuate the centre assembling at area B on evacuation map located at entrance of centre.

Upon being told of a bomb alert, operatives will evacuate the centre with your belongings and assembling at area B but on the other side of the green, on evacuation map located at entrance of centre.

Operatives will not communicate with any other operative during assessments; failure to comply will result in termination. Operatives will not disclose any information about the assessment process, as this is a breach of confidentiality.

Only carry out work that your assessor has designated to you.

In the event that you cannot carry out a task or make a mistake that does not constitute a danger, your assessor will ask you to look at your resource material or ask you oral questions, this constitutes a second attempt, if you cannot answer you will be referred.

Written questions.

All papers are open book except the closed book paper. This means that you can use BPEC and Gas Safe resource material.

All questions to be answered and passed to the assessor to mark. This is your first attempt.

The assessor will give you a student answer sheet with the question that were not correct on your First attempt, this is your second attempt. You must achieve more than 80% on this attempt, otherwise you have deemed to have failed the paper.

If you achieve 80%, but not 100%, oral questions will be given which you must answer correctly to achieve 100%. If you do not achieve 100% you have failed the paper.

You must pass all written papers, as well as all assessment activities to be deemed competent.

The assessor's decision is final. If you disagree with assessors decision and you feel that you have been unfairly treated. You have the right to appeal. This should be done in writing to the assessment centre management. Any appeal should be sent within 10 working days giving full details of complaint.

Oxford Energy Academy Ltd is committed to the provision of equal opportunities and the impartial assessment of all those attending its centre, Oxford Energy Academy Ltd equal opportunities policy will ensure that no one receives less favourable treatment than any other on the ground of race, colour, nationality, ethnic origin, sex, marital status, religion, sexuality, political belief, disability or age.

I understand and agree to abide with the above statements.

Name.....signature.....date.....