apprenticeship
FRAMEWORK

Process Manufacturing (Wales)

Issued by
Cogent

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Document status:
Work in progress

Prentisiaethau
Apprenticeships

Process Manufacturing (Wales)

Information on the Issuing Authority for this framework:

Cogent

The Apprenticeship sector for occupations in chemical manufacturing, nuclear science, oil and gas extraction (also includes process technology, bioscience, polymer and sign making).

Issue number: 1	This framework includes:
Framework ID: FR00354	Level 2 Level 3
Date this framework is to be reviewed by: 16/07/2012	This framework is for use in: **Wales**

Short description

The Process Manufacturing Framework provides work based training for young people and adults to undertake key technical, operational and maintenance roles in the Chemical, Petro-chemical, Pharmaceutical, Refinery and other related process industries.

There are two levels of Apprenticeship contained in this framework:
• The Foundation Apprenticeship (Level 2) in Process Manufacturing (usually take 15 to 24 months to complete)
• The Apprenticeship (Level 3) in Process Manufacturing (usually takes 24 to 36 months to complete)

The framework contains details of vocational qualifications, knowledge based technical

qualifications, Essential Skills Wales (Communication, Application of Number, Information Technology) and employee's rights and responsibilities required for an apprenticeship in Process Manufacturing.

Apprentices undertake training on-the-job at their workplace and off-the job usually delivered by a local training provider or Further Education College.

Further information on the types of apprenticeships and completion times can be found in other sections of this document.

Contact information

Proposer of this framework

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Purpose of this framework

Summary of the purpose of the framework

This framework is for the process manufacturing industries. The process manufacturing industries produce may of life's necessities including products like pharmaceuticals, soap and toiletries while the refining industries (also known as Downstream) is responsible for turning crude oil into fuels and lubricants.

The process manufacturing industries face many and considerable challenges: competition from companies all over the globe, the requirement to be safe, clean and sustainable and ever increasing public expectations for new and better products. Technology, science and engineering underpin the success of process manufacturing industries employers and combined they have an ongoing demand for thousands of highly skilled and flexible scientists, engineers, production operatives, managers and leaders. With an ageing workforce and a decline in the number of technically trained people coming through the system, meeting this demand has become an imperative.

There are a number of process manufacturing industries clustered around Cardiff, Swansea and Newport in the South of Wales, and Wrexham in the North. There are also two petroleum refineries at Milford Haven and Pembroke and a decommissioned refinery in Waterston, which currently has an oil storage and jetty facility in operation. The South Hook Terminal, In Milford Haven is the largest Liquefied Natural Gas (LNG) terminal in Europe and is a major contributor to the UK's energy needs.

The Petroleum, Chemicals and Pharmaceuticals Industries are strategically important to Wales and collectively employ around 5% of employees for UK industries in their sectors. The workforce within these industries accounts for 16% of the nations manufacturing workforce and 17% of manufacturing employers.

In Wales, the Chemicals industry has invested £38m in Research and Development in 2008 which accounted for 16% of nations Research and Development investment. Cogent manufacturing industries contributed in order of £836m into the nation’s wealth in 2008. The Cogent sector in Wales is an attractive target for investment and development, and one which can maintain a competitive edge through its use of intellectual capital. (Cogent Sector Skills Assessment Wales: www.cogent-ssc.com/research)

There are insufficient operators and technicians entering these industries to meet future

forecasted demand. The framework is designed to meet the needs of the process industries by providing the future skilled operators and technicians that will have the vocational skills and knowledge to meet the challenges listed above.

After undergoing this Foundation Apprenticeship/ Apprenticeship skilled operators and technicians could find themselves working in a variety of roles that aid production. A process operator or technician would start up, control, monitor and shut down the systems and machinery involved in production. A maintenance technician would keep the equipment in good working order. A refinery operator/technician would monitor and assist in the production of refinery products.

Aims and objectives of this framework (Wales)

Aim:
To provide a skilled technical workforce for the process manufacturing industries that will enable them to complete in a global market.

The objectives of this framework are:
1. To provide the skilled operators and technicians to meet future demand forecasted by the process manufacturing industries.
2. To provide a structured training framework that will provide the skills needed to operate, control and maintain plant and equipment.
3. To provide a development framework for existing staff in the process manufacturing industries to up-skill their current vocational skills and knowledge that will enable them to meet the future challenges of new technologies and changing production processes.
4. To provide progression opportunities for apprentices both within the process manufacturing industries and employment in other sectors as well as for those wishing to engage in further study in Further or Higher Education.
5. To attract new talent into the process manufacturing industries from a range of backgrounds, in order to meet industry requirements.

Entry conditions for this framework

Apprenticeship applicants will be expected to attend an interview with the employer/ training provider to assess their suitability for entry on to the framework. The interview provides an opportunity to talk directly to the applicant and discuss an individual's previous learning and experience. From this interview the employer will be able to decide whether a candidate is

suitable using some of the following guidance.

Foundation Apprenticeship

The Process Manufacturing Foundation Apprenticeship is open to all people aged 16 or over. Due to the competition for places the following skills and attributes relevant to working within the process manufacturing industries may be considered as part of the application process;

- motivation to succeed within industry
- an awareness of the demands of the Foundation Apprenticeship
- willingness to comply with employer/training provider terms and conditions of employment
- have the ability to apply learning in the workplace
- willingness to work with due regard to Health and Safety of self and others
- effective communication with a range of people.

The following examples of evidence can be used to support some of the above statements, such as;

- previous work experience or employment *or*
- voluntary or community based work *or*
- achievement of GCSEs (A*-E) or equivalent qualifications in Maths, English and Science *or*
- achievement of the Welsh Baccalaureate (Foundation/ Intermediate Diploma) Principal Learning in Engineering or Manufacturing & Product Design *or*
- achievement of Awards, Certificates or Diplomas in a related industry such as Science or Engineering *or*
- proof of completion of non-accredited courses.

Apprenticeship

The Process Manufacturing Apprenticeship is open to all people aged 16 or over. Due to the competition for places the following skills and attributes relevant to working within the process manufacturing industries may be considered as part of the application process;

- motivation to succeed within industry
- an awareness of the demands of the Apprenticeship
- willingness to comply with employer/training provider terms and conditions of employment
- have the ability to apply learning in the workplace
- willingness to work with due regard to Health and Safety of self and others
- effective communication with a range of people.

The following examples of evidence can be used to support some of the above statements,

such as;
• progression from a Process Manufacturing Foundation Apprenticeship or a Foundation Apprenticeship in a related discipline or
• previous work experience or employment *or*
• voluntary or community based work *or*
• achievement of GCSEs (A*-C) or equivalent qualifications in Maths, English and Science *or*
• achievement of the Welsh Baccalaureate (Intermediate/ Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design *or*
• achievement of Awards, Certificates or Diplomas in a related industry such as Science or Engineering *or*
• proof of completion of non-accredited courses.

All Foundation Apprenticeship/ Apprenticeship applicants should be aware of the varied working conditions within the process manufacturing industries, that may include;

- working at heights
- shiftwork (including nights and weekends)
- 365 day operations
- working outdoors
- wearing specialist safety equipment
- working within high hazard environment.

Level 2

Title for this framework at level 2

Foundation Apprenticeship in Process Manufacturing

Pathways for this framework at level 2

Pathway 1:	Process Operations
Pathway 2:	Process Engineering Maintenance

Level 2, Pathway 1: Process Operations

Description of this pathway

Process Manufacturing (Process Operator)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Process Operator	Operate and monitor basic plant and equipment, including pumps, valves, temperature gauges, filtration equipment, tanks and vessels.

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Processing Industries Operations (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	500/7759/4	PAA\VQSET	41	256	N/A

C2 - Level 2 Certificate in Operations and Technical Support in the Process Industries (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	500/7756/9	PAA\VQSET	29	182	N/A

Knowledge qualifications available to this pathway

K1 - Level 2 Diploma in Process Technology (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0820/9	City and Guilds of London Institute	54	400	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1 will provide the underpinning knowledge and understanding for C1 or C2

The decision on which competence qualification the apprentices will undertake will be made by the training provider and employer, based on the experience of the apprentice, future job role requirements and the complexity of the employer's operations.

The credit values and guided learning hours (training hours) quoted in the above tables are the minimum for the qualification as stated on the Register of Regulated Qualifications. These credit values and guided learning hours (training hours) may vary according to specific pathways/ options taken within qualifications. For further details please refer to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 1	6
Application of numbers	Level 1	6
IT	Level 1	6

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Process Manufacturing Foundation Apprenticeship, however, new entrants to the industry may be looking to progress from the following areas:

• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Process Manufacturing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)

• GCSEs in Science, Maths or Engineering also provide a strong platform for progression on to the framework.

• Welsh Baccalaureate (Foundation/ Intermediate Diploma) Principal Learning in Engineering or Manufacturing & Product Design also provide an excellent opportunity for progression in to Process Manufacturing.

• Previous experience in the process manufacturing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Foundation Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

• Apprenticeship in Process Manufacturing or a related discipline

• Welsh Baccalaureate (Intermediate/ Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design

• Develop their career in coaching through undertaking Assessor and Verifier Awards

• Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management.
• Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Foundation Apprenticeship could lead to one of the following job roles:

Chemicals
• Process Operator

• **Pharmaceutical**
• Process Operator

• **Downstream**
• Refinery Process Operator

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

Delivery and assessment of employee rights and responsibilities

This Employee Rights and Responsibilities (ERR) section has no QCF Credit Value.

It is important that all employees understand and can demonstrate an understanding of their rights & responsibilities as an employee.

The Cogent Employee's Rights and Responsibilities (ERR) Workbook and Assessment Document has been designed to assist employers and training providers and should be used to deliver this mandatory element of the Apprenticeship Framework.

The content is as follows: -

1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Foundation Apprenticeship/Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the assessor.

Upon progression from a Foundation Apprenticeship to an Apprenticeship in Process Manufacturing, apprentices would be exempt from this requirement provided that they are still with the same employer.
To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

Level 2, Pathway 2: Process Engineering Maintenance

Description of this pathway

Process Manufacturing (Process Engineering Maintenance)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Process Engineering Maintenance Operative	Carry out routine maintenance and repair of basic plant and equipment, including pumps, valves, temperature gauges, filtration equipment, tanks and vessels.

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Certificate in Process Engineering Maintenance (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/0209/6	PAA\VQSET	28	162	N/A

C2 - Level 2 Certificate in Operations and Technical Support in the Process Industries (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	500/7756/9	PAA\VQSET	29	182	N/A

Knowledge qualifications available to this pathway

K1 - BTEC Level 2 Extended Certificate in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - BTEC Level 2 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1 or K2 will provide the underpinning knowledge and understanding for C1 or C2.

The decision on which competence qualification and which knowledge qualification the apprentices will undertake will be made by the training provider and employer, based on the experience of the apprentice, based on the experience of the apprentice, future job role requirements and the complexity of them employer's operations. It is satisfactory to achieve this Foundation Apprenticeship by undertaking the minimum knowledge qualification of 180 Guided Learning Hours (training hours). The knowledge qualification of 360 Guided Learning Hours (training hours) will provide a more in-depth technical knowledge if required.

Within the PAA\VQSET Level 2 Certificate in Operations and Technical Support in the Process Industries (QCF) learners may achieve one of the following pathways: Maintenance Support or Support Services.

For the Maintenance Support Pathway learners must achieve a minimum of 34 Credits by completing all 8 Mandatory Units, all 4 Maintenance Support Mandatory Units and 2 Optional Units. Knowledge and competence units must be taken in combination.

For the Support Services Pathway learners must achieve a minimum of 29 Credits by completing all 8 Mandatory Units and 6 Optional Units. Knowledge and competence units must be taken in combination.

The credit values and guided learning hours (training hours) quoted in the above tables are the minimum for the qualification as stated on the Register of Regulated Qualifications. These credit values and guided learning hours (training hours) may vary according to specific pathways/ options taken within qualifications. For further details please refer to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 1	6
Application of numbers	Level 1	6
IT	Level 1	6

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Process Manufacturing Foundation Apprenticeship, however, new entrants to the industry may be looking to progress from the following areas:

• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Process Manufacturing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)

• GCSEs in Science, Maths or Engineering also provide a strong platform for progression on to the framework.

• Welsh Baccalaureate (Foundation/ Intermediate Diploma) Principal Learning in Engineering or Manufacturing & Product Design also provide an excellent opportunity for progression in to Process Manufacturing.

• Previous experience in the process manufacturing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Foundation Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

• Apprenticeship in Process Manufacturing or related discipline

• Welsh Baccalaureate (Intermediate/ Advanced Diploma) Principal Learning in Engineering or Manufacturing and Product Design

• Develop their career in coaching through undertaking Assessor and Verifier Awards
• Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management.
• Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Foundation Apprenticeship could lead to one of the following job roles:

Chemicals
• Process Operator (multiskilled)
• Process Engineering Maintenance Operative (Electrical, Mechanical & Instrumentation)

Pharmaceutical
• Process Operator (multiskilled)
• Process Engineering Maintenance Operative (Electrical, Mechanical & Instrumentation)

Downstream
• Refinery Process Operator (multiskilled)
• Process Engineering Maintenance Operative (Electrical, Mechanical & Instrumentation)

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

Delivery and assessment of employee rights and responsibilities

This Employee Rights and Responsibilities (ERR) section has no QCF Credit Value.

It is important that all employees understand and can demonstrate an understanding of their rights & responsibilities as an employee.

The Cogent Employee's Rights and Responsibilities (ERR) Workbook and Assessment Document has been designed to assist employers and training providers and should be used to deliver this mandatory element of the Apprenticeship Framework.

The content is as follows: -

1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Foundation Apprenticeship/Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the assessor.

Upon progression from a Foundation Apprenticeship to an Apprenticeship in Process Manufacturing, apprentices would be exempt from this requirement provided that they are still with the same employer.

To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

Level 3

Title for this framework at level 3

Apprenticeship in Process Manufacturing

Pathways for this framework at level 3

Pathway 1:	Process Operator/Technician
Pathway 2:	Process Engineering Maintenance
Pathway 3:	Downstream Operations

Level 3, Pathway 1: Process Operator/Technician

Description of this pathway

Process Manufacturing (Process Operator/Technician)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Process Operator/Technician	Operate, monitor and control complex continuous and batch plant and equipment including reactors, heat exchangers, distillation columns and control equipment.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Diploma in Processing Industries Operations (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	500/7802/1	PAA\VQSET	48	285	N/A

C2 - Level 3 Diploma in Operations and Technical Support in the Process Industries (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	500/7757/0	PAA\VQSET	42	246	N/A

Knowledge qualifications available to this pathway

K1 - Level 3 Diploma in Process Technology (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/1066/6	City and Guilds of London Institute	54	460	N/A

K2 - BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7315/1	Edexcel	120	720	N/A

Knowledge qualifications available to this pathway(cont.)

K3 - BTEC Level 3 Diploma in Applied Science (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/6673/0	Edexcel	120	720	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1, K2 or K3 will provide the underpinning knowledge and understanding for C1 or C2.

The decision on which competence qualification and which knowledge based qualification the apprentices will undertake will be made by the training provider and employer, based upon the experience of the apprentice, based on the experience of the apprentice, future job role requirements and the complexity of them employer's operations. It is satisfactory to achieve this Apprenticeship by undertaking the minimum knowledge qualification of 460 Guided Learning Hours (training hours). The knowledge qualification of 720 Guided Learning Hours (training hours) will provide a more in-depth technical knowledge if required.

The credit values and guided learning hours (training hours) quoted in the above tables are the minimum for the qualification as stated on the Register of Regulated Qualifications. These credit values and guided learning hours (training hours) may vary according to specific pathways/ options taken within qualifications. For further details please refer to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 2	6
Application of numbers	Level 2	6
IT	Level 2	6

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Process Manufacturing Apprenticeship, however, new entrants to the industry may be looking to progress from the following areas:

• Completion of a Foundation Apprenticeship in Process Manufacturing or related discipline
• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Process Manufacturing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)
• GCSEs or A' Levels in Science, Maths or Engineering also provide a strong platform for progression on to the framework.
• Welsh Baccalaureate (Intermediate / Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design also provide an excellent opportunity for progression in to Process Manufacturing.
• Previous experience in the process manufacturing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

• Foundation Degree in Process Engineering or a related discipline
• Higher National Certificate/ Diploma in Chemical Engineering or a related discipline

• Welsh Baccalaureate (Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design
• Develop their career in coaching through Assessor and Verifier Awards
• Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management
• Membership of a professional institution at Engineering Technician level (Further information available at www.engineeringuk.com)
• Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Apprenticeship could lead to one of the following job roles:

Chemicals
• Process Operator/ Technician or Control Room Operator/ Technician

Pharmaceutical
• Process Operator/ Technician or Control Room Operator/ Technician

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

UCAS points for this pathway: Not applicable.

Delivery and assessment of employee rights and responsibilities

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1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Foundation Apprenticeship/Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the assessor.

Upon progression from a Foundation Apprenticeship to an Apprenticeship in Process Manufacturing, apprentices would be exempt from this requirement provided that they are still with the same employer.

To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

Level 3, Pathway 2: Process Engineering Maintenance

Description of this pathway

Process Manufacturing (Process Engineering Maintenance)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Process Engineering Maintenance Craftsperson/ Technician	Carry out complex repair/ service/ installation of plant and equipment including pumps, valves, pipework, reactors, heat exchangers and columns.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Diploma in Process Engineering Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/0211/4	PAA\VQSET	65	349	N/A

Knowledge qualifications available to this pathway

K1 - BTEC Level 3 Diploma in Engineering (Specialist: Operations and Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/8163/9	Edexcel	60	360	N/A

K2 - BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7315/1	Edexcel	120	720	N/A

K3 - BTEC Level 3 Diploma in Electrical/ Electronic Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/8098/2	Edexcel	120	720	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1, K2 or K3 will provide the underpinning knowledge and understanding for C1

The decision on which knowledge based qualification the apprentices will undertake will be made by the training provider and employer, based on the experience of the apprentice, future job role requirements and the complexity of the employer's operations. It is satisfactory to achieve this Apprenticeship by undertaking the minimum knowledge qualification of 360 Guided Learning Hours (training hours). The knowledge qualification of 720 Guided Learning Hours (training hours) will provide a more in-depth technical knowledge if required.

The credit values and guided learning hours (training hours) quoted in the above tables are the minimum for the qualification as stated on the Register of Regulated Qualifications. These credit values and guided learning hours (training hours) may vary according to specific pathways/ options taken within qualifications. For further details please refer to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 2	6
Application of numbers	Level 2	6
IT	Level 2	6

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Process Manufacturing Apprenticeship, however, new entrants to the industry may be looking to progress from the following areas:

• Completion of a Foundation Apprenticeship in Process Manufacturing or a related discipline
• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Process Manufacturing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)
• GCSEs or A' Levels in Science, Maths or Engineering also provide a strong platform for progression on to the framework.
• Welsh Baccalaureate (Intermediate / Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design also provide an excellent opportunity for progression in to Process Manufacturing.
• Previous experience in the process manufacturing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

• Foundation Degree in Process Engineering or a related discipline
• Higher National Certificate/ Diploma in Chemical Engineering or a related discipline

• Welsh Baccalaureate (Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design
• Develop their career in coaching through Assessor and Verifier Awards
• Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management
• Membership of a professional institution at Engineering Technician level (Further information available at www.engineeringuk.com)
• Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Apprenticeship could lead to one of the following job roles:

Chemicals
• Process Operators/Technicians (multiskilled)
• Process Engineering Maintenance Technicians (Electrical, Mechanical & Instrumentation)

Pharmaceutical
• Process Operators/Technicians (multiskilled)
• Process Engineering Maintenance Technicians (Electrical, Mechanical & Instrumentation)

Downstream
• Refinery Process Operators/Technicians (multiskilled)
• Process Engineering Maintenance Technicians (Electrical, Mechanical & Instrumentation)

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

UCAS points for this pathway: Not applicable.

Delivery and assessment of employee rights and responsibilities

This Employee Rights and Responsibilities (ERR) section has no QCF Credit Value.

It is important that all employees understand and can demonstrate an understanding of their rights & responsibilities as an employee.

The Cogent Employee's Rights and Responsibilities (ERR) Workbook and Assessment Document has been designed to assist employers and training providers and should be used to deliver this mandatory element of the Apprenticeship Framework.

The content is as follows: -

1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Foundation Apprenticeship/Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the assessor.

Upon progression from a Foundation Apprenticeship to an Apprenticeship in Process Manufacturing, apprentices would be exempt from this requirement provided that they are still with the same employer.

To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

Level 3, Pathway 3: Downstream Operations

Description of this pathway

Process Manufacturing (Downstream Operations)

Entry requirements for this pathway in addition to the framework entry requirements

None

Job title(s)	Job role(s)
Downstream Field Operator/ Technician	Operate and control complex plant and equipment including distillation columns, catalytic crackers and ancillary plant outside the control room.
Refinery Control Room Operator/ Technician	Operate and control complex plant and equipment including distillation columns, catalytic crackers and ancillary plant from inside the control room.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 Diploma in Downstream Control Room Operations (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	500/6695/X	PAA\VQSET	72	429	N/A

C2 - Level 3 Diploma in Downstream Field Operations (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	500/6693/6	PAA\VQSET	69	406	N/A

Knowledge qualifications available to this pathway

K1 - Level 3 Diploma in Process Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/1066/6	City and Guilds of London Institute	54	460	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1 will provide the underpinning knowledge and understanding for C1 or C2

The decision on which competence qualification the apprentices will undertake will be made by the training provider and employer, based on the experience of the apprentice, future job role requirements and the complexity of them employer's operations.

The credit values and guided learning hours (training hours) quoted in the above tables are the minimum for the qualification as stated on the Register of Regulated Qualifications. These credit values and guided learning hours (training hours) may vary according to specific pathways/ options taken within qualifications. For further details please refer to the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 2	6
Application of numbers	Level 2	6
IT	Level 2	6

Progression routes into and from this pathway

Progression into this pathway:

There are no pre-defined routes of entry into the Process Manufacturing Apprenticeship, however, new entrants to the industry may be looking to progress from the following areas:

• Completion of a Foundation Apprenticeship in Process Manufacturing or a related discipline
• Work based qualifications such as NVQs/ SVQs or vocationally related qualifications in a subject related to Process Manufacturing. (Examples may include: BTEC's, City & Guilds, PAA/VQ-SET Diplomas/ Certificates/ Awards)
• GCSEs or A' Levels in Science, Maths or Engineering also provide a strong platform for progression on to the framework.
• Welsh Baccalaureate (Intermediate / Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design also provide an excellent opportunity for progression in to Process Manufacturing.
• Previous experience in the process manufacturing industries or a related discipline can also be an appropriate route of entry.

Progression from this pathway:

Following completion of this Apprenticeship there are several options open to the successful candidate who wishes to continue their development in order to progress their career. There are opportunities to continue to undertake further vocational training or academic qualifications. These may include (but are not exclusive to) the following:

• Foundation Degree in Process Engineering or a related discipline
• Higher National Certificate/ Diploma in Chemical Engineering or a related discipline

• Welsh Baccalaureate (Advanced Diploma) Principal Learning in Engineering or Manufacturing & Product Design
• Develop their career in coaching through Assessor and Verifier Awards
• Qualifications in a related area, including (but not limited to) Health & Safety, Training & Development, Business Improvement Techniques and Supervisory Management
• Membership of a professional institution at Engineering Technician level (Further information available at www.engineeringuk.com)
• Cogent Gold Standard qualifications contained within the Gold Standard frameworks (www.cogent-prospectus.com)

Successful completion of the Apprenticeship could lead to one of the following job roles:

Downstream
• Refinery Control Room Operator/ Technician or Downstream Field Operator/ Technician

For a more in-depth look at careers within the Cogent Industries, please look at our careers pathway website www.cogent-careers.com

UCAS points for this pathway: Not applicable.

Delivery and assessment of employee rights and responsibilities

This Employee Rights and Responsibilities (ERR) section has no QCF Credit Value.

It is important that all employees understand and can demonstrate an understanding of their rights & responsibilities as an employee.

The Cogent Employee's Rights and Responsibilities (ERR) Workbook and Assessment Document has been designed to assist employers and training providers and should be used to deliver this mandatory element of the Apprenticeship Framework.

The content is as follows: -

1. Statutory rights and responsibilities under Employment Law.
2. Procedures and documentation that affect the relationship between employee and employer.
3. Sources of information and advice on employment rights and responsibilities.
4. The role played by an Apprentice's occupation in the organisation and industry.
5. Career pathways open to an Apprentice.
6. The types of representative bodies relevant to the industry and organisation and their main roles and responsibilities.
7. Where and how to get advice on the industry, occupation, training and careers.
8. Organisational principles and codes of practice.
9. Issues of public concern that affect the organisation and industry.

It is essential that the Apprentice can demonstrate competence in ERR and, as a result, is required to provide documentary evidence confirming their achievements. Examples of how the evidence can be gathered by individuals include;

- completing a company induction,
- attending relevant taught off-the-job training sessions
- on-the-job assessment.

When applying for the Foundation Apprenticeship/Apprenticeship Certificate, the training provider or employer will provide evidence that ERR has been achieved by submitting a copy of the completed assessment document, signed by both the apprentice and the assessor.

Upon progression from a Foundation Apprenticeship to an Apprenticeship in Process Manufacturing, apprentices would be exempt from this requirement provided that they are still with the same employer.

To obtain a copy of the workbook and assessment document, please visit the Apprenticeships section of the Cogent website at www.cogent-ssc.com.

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

The Process Manufacturing Apprenticeship aims to promote diversity, opportunity and inclusion in Wales by offering high-quality, learning opportunities.

The delivery of the Foundation Apprenticeship/ Apprenticeship Framework must be in environments free from prejudice and discrimination where all learners can contribute fully and freely and feel valued.

There must be no overt or covert discriminatory practices in selection and recruitment of apprentices to the programme, which is available to all people, regardless of gender, ethnic origin, religion/ belief, sexual orientation or disability who meet the stated selection criteria.

Issues in Wales
Gender: there is an under-representation of women within the sector, 24%.

Ethnicity: representation of ethnic minority groups is approximately 3% of the workforce.

Age: in the process manufacturing industries, there is an ageing workforce with only 9% under 25 years.

Barriers

Geographical location of the refining industries is away from areas with high concentrations of ethnic minorities. Whilst the modern process industries are efficient, clean and have a good safety record, there is still a misconception that the work is dirty and dangerous. Careers advice regarding entry in to the industry is often poor. Staff turnover is limited due to high retention rates.

Actions
Cogent have introduced a series of industry specific case studies and Careers Pathways on the Cogent Careers web site (www.cogent-careers.com) to encourage people from all backgrounds to enter the process industries.

Cogent regularly contribute to careers fairs and skills events in Wales to promote

apprenticeships, providing an ideal opportunity to address issues faced by women and ethnic minorities.

Cogent are also working with representative groups such as the United Kingdom Resource Centre, engaging with their Women in Science and Engineering Work programmes.

On and off the job training (Wales)

Summary of on- and off-the-job training

For both Foundation Apprenticeships and Apprenticeships the hours outlined in the sections that follow may vary depending on previous experience and attainment of the apprentice. Where a learner enters an apprenticeship agreement having previously attained or acquired the appropriate competence or knowledge, this prior learning needs to be recognised and documented using the relevant QCF credit transfer, QCF exemption or Recognition of Prior Learning (RPL) procedures. The amount of 'on-the-job' training required to complete the apprenticeship under the apprenticeship agreement may then be reduced accordingly, provided the total numbers of 'on-the-job' hours for this framework can be verified for apprenticeship certification.

Those apprentices who commence training under a new apprenticeship agreement with a new employer may bring a range of prior experience with them. When an apprentice can claim 5% or more hours towards the 'on-the-job' framework total through prior learning acquired from previous full-time education, employment or other vocational programme, then the apprentice's learning programme should include "customisation". Training providers are encouraged to identify additional 'on-the-job' training programmes that customise the learning to the new workplace. Customisation programmes may include selecting appropriate additional Unit(s) from QCF qualifications, or relevant units recognised as Quality Assured Lifelong Learning [QALL] through a CQFW recognised body, or follow Essential Skills at a level higher than that specified in the framework, including one or more Wider Key Skills or other competency-based qualifications/units relevant to the workplace.

For an apprentice who has already achieved the relevant qualification, they must have been certificated within 5 years from the date of application for the Foundation Apprenticeship/ Apprenticeship Certificate or have been continuously employed in the industry for a minimum

duration of 3 years.

Job roles within the Process Manufacturing Industries require a thorough level of technical competence and knowledge which will be undertaken through work-based training, practice, experience and academic study.

'On-the-job' learning must be formally recorded, either in a diary, workbook, and portfolio or be verified by attendance records. This evidence needs to be checked and signed by the employer or mentor. These records of hours may need to be submitted to the Certifying Authority when applying for an apprenticeship completion certificate.

Total Training Hours for Foundation Apprenticeship Pathways

Process Operations Foundation Apprenticeship Pathway 1a: 871 Total Training Hours
PAA\VQSET Level 2 NVQ Diploma in Processing Industries Operations (256 Training Hours)
City and Guilds Level 2 Diploma in Process Technology (400 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 24 months to complete.

Process Operations Foundation Apprenticeship Pathway 1b: 797 Total Training Hours
PAA\VQSET Level 2 Certificate in Operations and Technical Support in the Process Industries (182 Training Hours). City and Guilds Level 2 Diploma in Process Technology (400 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 24 months to complete

Process Engineering Maintenance Foundation Apprenticeship Pathway 2a: 557 Total Training Hours
PAA\VQSET Level 2 NVQ Certificate in Process Engineering Maintenance (162 Training Hours)
Edexcel BTEC Level 2 Extended Certificate in Engineering (180 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 15 months to complete.

Process Engineering Maintenance Foundation Apprenticeship Pathway 2b: 737 Total Training Hours
PAA\VQSET Level 2 NVQ Certificate in Process Engineering Maintenance (162 Training Hours).

Edexcel BTEC Level 2 Diploma in Engineering (360 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 24 months to complete.

Process Engineering Maintenance Foundation Apprenticeship Pathway 2c: 615 Total Training Hours
PAA\VQSET Level 2 Certificate in Operations and Technical Support in the Process Industries (220 Training Hours)*
Edexcel BTEC Level 2 Extended Certificate in Engineering (180Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 15 months to complete.

Process Engineering Maintenance Foundation Apprenticeship Pathway 2d: 795 Total Training Hours
PAA\VQSET Level 2 Certificate in Operations and Technical Support in the Process Industries (220 Training Hours)*
Edexcel BTEC Level 2 Diploma in Engineering (360 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 24 months to complete.

** **Pathways 2c & 2d** - For the Maintenance Support Pathway within the PAA\VQSET Level 2 Certificate in Operations and Technical Support in the Process Industries (QCF) learners are required to undertake an additional 38 Training Hours, making a total of 220 Training Hours.*

Total Training Hours for Apprenticeship Pathways

Process Operations Apprenticeship Pathway 1a: 960 Total Training Hours
PAA\VQSET Level 3 NVQ Diploma in Processing Industries Operations (285 Training Hours).
City and Guilds Level 3 Diploma in Process Technology (460 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 24 months to complete.

Process Operations Apprenticeship Pathway 1b: 921 Total Training Hours
PAA\VQSET Level 3 Diploma in Operations and Technical Support in the Process Industries (246 Training Hours).
City and Guilds Level 3 Diploma in Process Technology (460 Training Hours).

Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 24 months to complete.

Process Operations Apprenticeship Pathway 1c: 1220 Total Training Hours
PAA\VQSET Level 3 NVQ Diploma in Processing Industries Operations (285 Training Hours).
Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (720 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Process Operations Apprenticeship Pathway 1d: 1181 Total Training Hours
PAA\VQSET Level 3 Diploma in Operations and Technical Support in the Process Industries (246 Training Hours).
Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (720 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Process Operations Apprenticeship Pathway 1e: 1181 Total Training Hours
PAA\VQSET Level 3 Diploma in Operations and Technical Support in the Process Industries (246 Training Hours).
Edexcel BTEC Level 3 Diploma in Applied Science (720 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Process Operations Apprenticeship Pathway 1f: 1220 Total Training Hours
PAA\VQSET Level 3 NVQ Diploma in Processing Industries Operations (285 Training Hours).
Edexcel BTEC Level 3 Diploma in Applied Science (720 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Process Engineering Maintenance Apprenticeship Pathway 2a: 924 Total Training Hours
PAA\VQSET Level 3 NVQ Diploma in Process Engineering Maintenance (349 Training Hours)
Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Operations and Maintenance) (360 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring

(215 Training Hours).
This pathway will take 24 months to complete.

Process Engineering Maintenance Apprenticeship Pathway 2b: 1284 Total Training Hours
PAA\VQSET Level 3 NVQ Diploma in Process Engineering Maintenance (349 Training Hours)
Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (720 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Process Engineering Maintenance Apprenticeship Pathway 2c: 1284 Total Training Hours
PAA\VQSET Level 3 NVQ Diploma in Process Engineering Maintenance (349 Training Hours)
Edexcel BTEC Level 3 Diploma in Electrical/Electronic Engineering (720 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Downstream Operations Apprenticeship Pathway 3a: 1081 Total Training Hours
PAA\VQSET Level 3 Diploma in Downstream Field Operations (406 Training Hours)
City and Guilds Level 3 Diploma in Process Technology (460 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Downstream Operations Apprenticeship Pathway 3b: 1104 Total Training Hours
PAA\VQSET Level 3 Diploma in Downstream Control Room Operations (429 Training Hours)
City and Guilds Level 3 Diploma in Process Technology (460 Training Hours).
Other framework includes requirements covering Essential Skills Wales, ERR, and mentoring (215 Training Hours).
This pathway will take 36 months to complete.

Minimum credits for each pathway:

- Foundation Apprenticeship Process Operations Pathway 1a: 113 Credits
- Foundation Apprenticeship Process Operations Pathway 1b: 101 Credits
- Foundation Apprenticeship Process Engineering Maintenance Pathway 2a: 76 Credits
- Foundation Apprenticeship Process Engineering Maintenance Pathway 2b: 106 Credits
- Foundation Apprenticeship Process Engineering Maintenance Pathway 2c: 82 Credits

- Foundation Apprenticeship Process Engineering Maintenance Pathway 2d: 112 Credits

- Apprenticeship Process Operator/Technician Pathway 1a: 120 Credits
- Apprenticeship Process Operator/Technician Pathway 1b: 114 Credits
- Apprenticeship Process Operator/Technician Pathway 1c: 186 Credits
- Apprenticeship Process Operator/Technician Pathway 1d: 180 Credits
- Apprenticeship Process Operator/Technician Pathway 1e: 180 Credits
- Apprenticeship Process Operator/Technician Pathway 1f: 186 Credits
- Apprenticeship Process Engineering Maintenance Pathway 2a: 143 Credits
- Apprenticeship Process Engineering Maintenance Pathway 2b: 203 Credits
- Apprenticeship Process Engineering Maintenance Pathway 2c: 203 Credits
- Apprenticeship Downstream Operations Pathway 3a: 141 Credits
- Apprenticeship Downstream Operations Pathway 3b: 144 Credits

Off-the-job training

Off the job training
'Off-the-job' training is defined as time for learning activities away from normal work duties. For this framework the training hours for 'off-the-job' training is as follows:

The amount of 'off-the-job' training hours required to complete both the Foundation Apprenticeship/ Apprenticeship includes 215 Training Hours of additional time necessary to meet all of the framework requirements covering Essential Skills Wales, ERR and mentoring.

Foundation Apprenticeship
Below are the 'off-the-job' training hours for the Process Operator pathway and Process Engineering Maintenance pathway. The components of the framework undertaken will be decided by the employer, provider and apprentice and be based on the employer's requirements and the prior achievements and prior experience of the apprentice

Process Operator Pathway 1a or 1b: 615 'off-the-job' Training Hours
City and Guilds Level 2 Diploma in Process Technology (QCF) (400 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Engineering Maintenance Pathways 2a or 2c: 395 'off-the-job' Training Hours
Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF) (180 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Maintenance Pathways 2b or 2d: 575 'off-the-job' Training Hours
Edexcel BTEC Level 2 Diploma in Engineering (QCF) (360 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Off-the-job training includes 215 Training Hours of additional time necessary to meet all of the framework requirements covering Essential Skills Wales, ERR, and mentoring.

Apprenticeship
Below are the 'off-the-job' Training Hours for the Process Operator/ Technician pathway, Process Engineering Maintenance pathway and the Downstream Operations pathway. The components of the framework undertaken will be decided by the employer, provider and apprentice and be based on the employer's requirements and the prior achievements and prior experience of the apprentice.

Process Operations Pathway 1a or 1b: 675 'off-the-job' Training Hours.
City and Guilds Level 3 Diploma in Process Technology (QCF) (460 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Operations Pathway 1c or 1d: 935 'off-the-job' Training Hours.
Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) (720 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Operations Pathway 1e or 1f: 935 'off-the-job' Training Hours.
Edexcel BTEC Level 3 Diploma in Applied Science (QCF) (720 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Engineering Maintenance Pathway 2a: 575 'off-the-job' Training Hours.
Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Operations and Maintenance)(QCF) (360 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Engineering Maintenance Pathway 2b: 935 'off-the-job' Training Hours.
Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) (720 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Process Engineering Maintenance Pathway 2c: 935 'off-the-job' Training Hours.
Edexcel BTEC Level 3 Diploma in Electrical/Electronic Engineering (QCF) (720 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Downstream Operations Pathways 3a or 3b: 675 'off-the-job' Training Hours.
City and Guilds Level 3 Diploma in Process Technology (QCF) (460 'off-the-job' Training Hours)
Additional framework requirements (215 'off-the-job' Training Hours)

Off-the-job training includes 215 Training Hours of additional time necessary to meet all of the framework requirements covering Essential Skills Wales, ERR, and mentoring.

How this requirement will be met

Foundation Apprenticeship

Pathways – Process Operations; Process Engineering Maintenance

Evidence:

Copy of a Certificate for the knowledge qualification –
• Level 2 Diploma in Process Technology or
• Level 2 Diploma in Engineering or
• Level 2 Extended Certificate in Engineering
Copies of the required Certificates for Essential Skills Wales
Copy of the completed assessor's evidence document for Employee Rights & Responsibilities
Copy of a signed declaration from the training provider stating how the training hours for other types of 'off-the-job' training has been achieved.

Example: How the 'off-the-job' learning requirement will be met using the Process Operations Pathway 1a

• Level 2 Diploma in Process Technology (QCF) [400 Training Hours]
• Level 1 Essential Skills Wales Maths (alternatively Key Skill Level 1 Application of

Number)[45 Training Hours]*
• Level 1 Essential Skills Wales English (alternatively Key Skill Level 1 Communication) [45 Training Hours]*
• Level 1 Essential Skills Wales Information Communication Technology (ICT) (alternatively Key Skill Level 1 ICT) [45 Training Hours]*
• Company Induction and Employee's Rights and Responsibilities (ERR) [40 Training Hours]
• Mentoring for the duration of the framework [40 Training Hours]

• **Total** [615 Training Hours]

* - Please refer to section on Transferable Skills for a list of exemptions or proxy qualifications.

Apprenticeship

Pathways – Process Operator/ Technician; Process Engineering Maintenance; Downstream Operations

Evidence:
Copy of a Certificate for the knowledge qualification –
• Level 3 Diploma in Operations and Maintenance Engineering or
• Level 3 Diploma in Process Technology or
• Level 3 Diploma in Applied Science or
• Level 3 Diploma in Electrical/ Electronic Engineering
Copies of the required Certificates for Essential Skills Wales
Copy of the completed assessor's evidence document for Employee's Rights & Responsibilities
Copy of a signed declaration from the training provider stating how the training hours for other types of 'off-the-job' training has been achieved.

Example: How the 'off-the-job' learning requirement will be met using the Process Operations Pathway 1a

• Level 3 Diploma in Process Technology [460 Training Hours]
• Level 2 Essential Skills Wales Maths (alternatively Key Skill Level 2 Application of Number) [45 Training Hours]*
• Level 2 Essential Skills Wales English (alternatively Key Skill Level 2 Communication) [45

Training Hours]*
• Level 2 Essential Skills Wales Information Communication Technology (ICT) (alternatively Key Skill Level 2 ICT) [45 Training Hours]*
• Company Induction and Employee's Rights and Responsibilities (ERR) [40 Training Hours]
• Mentoring for the duration of the framework [40 Training Hours]

• **Total** [675 Training Hours]

Training hours delivered under an apprenticeship agreement may vary depending on the previous experience and attainment of the apprentice.
The amount of off-the-job training required to complete the apprenticeship under the apprenticeship agreement may then be reduced accordingly, provided the total number of off-the-job hours for this framework can be verified for apprenticeship certification.

Previous attainment

Where a learner enters an apprenticeship agreement having previously attained parts or all of the relevant qualifications, this prior learning needs to be recognised using either QCF credit transfer for achievement within the QCF or through recording of exceptions for certification learning outside of the QCF, for example Principal Learning qualifications.
For an apprentice who has already achieved the relevant qualifications, they must have been certificated within 5 years of applying for the Foundation Apprenticeship/ Apprenticeship Certificate.

Previous experience

Where a learner enters an apprenticeship agreement with previous work-related experience, this prior learning needs to be recognised for further details please see QCF guidance on claiming credit. To count towards apprenticeship certification, previous experience must be recorded using the appropriate Awarding Organisation's QCF "Recognition of Prior Learning" procedures and the hours recorded may then count towards the off-the-job hours required to complete this apprenticeship.
For an apprentice with prior uncertificated learning experience, the off-the-job learning must have been acquired within 2 years of application for the Foundation Apprenticeship/ Apprenticeship Certificate or have been continuously employed in the relevant job role in the industry for a minimum duration of 3 years.

Off-the-job training needs to:
• Be planned, reviewed and evaluated jointly between the apprentice and a tutor, teacher, mentor or manager;
• Allow access as and when required by the apprentice either to a tutor, teacher, mentor or manager;
• Be delivered during contracted working hours;
• Be delivered through one or more of the following methods: individual and group teaching , e-learning, distance learning, coaching, mentoring, feedback and assessment, collaborative/networked learning with peers, guided study and induction.

Off-the-job training must be formally recorded either in a diary, workbook, portfolio, or be verified by attendance records. The evidence needs to be checked and signed by the assessor and employer.

On-the-job training

'On-the-job' training is defined as skills, knowledge and competence gained within normal working duties. For this framework the training hours for 'on-the-job' training is as follows:

Foundation Apprenticeship

Process Operator Pathway 1a: 256 Training Hours
PAA/VQ-SET Level 2 NVQ Diploma in Processing Industries Operations (QCF)

Process Operator Pathway 1b: 182 Training Hours.
PAA/VQ-SET Level 2 Certificate in Operations and Technical Support in the Process Industries (QCF)

Process Engineering Maintenance Pathways 2a or 2b: 162 Training Hours.
PAA/VQ-SET Level 2 NVQ Certificate in Process Engineering Maintenance (QCF)

Process Engineering Maintenance Pathways 2c or 2d: 220 Training Hours.
PAA/VQ-SET Level 2 Certificate in Operations and Technical Support in the Process Industries

(QCF)

(For the Maintenance Support Pathway within the PAA\VQSET Level 2 Certificate in Operations and Technical Support in the Process Industries (QCF) learners are required to undertake an additional 38 Training Hours, making a total of 220 Training Hours.)

Apprenticeship

Process Operator/ Technician pathway 1a, 1c or 1f: 285 Training Hours.
PAA/VQ-SET Level 3 NVQ Diploma in Processing Industries Operations (QCF)

Process Operator/ Technician pathways 1b, 1d or 1e: 246 Training Hours.
PAA/VQ-SET Level 3 Diploma in Operations and Technical Support in the Process Industries (QCF)

Process Engineering Maintenance pathways 2a, 2b or 2c: 349 Training Hours.
PAA/VQ-SET Level 3 NVQ Diploma in Process Engineering Maintenance (QCF)

Downstream Operations pathway 3a: 406 Training Hours.
PAA/VQ-SET Level 3 Diploma in Downstream Field Operations (QCF)

Downstream Operations pathway 3b: 429 Training Hours.
PAA/VQ-SET Level 3 Diploma in Downstream Control Room Operations (QCF)

How this requirement will be met

Foundation Apprenticeship

Pathways – Process Operations: Process Engineering Maintenance

Evidence:
Copy of a Certificate for the competence qualification –

• Level 2 Certificate in Operations and Technical Support in the Process Industries or
• Level 2 NVQ Diploma in Process Engineering Maintenance or
• Level 2 NVQ Diploma in Process Industries Operations
Copy of any certificates for any training courses attended
Copy of any completed assessor/ monitoring reports
Copy of any signed declaration from the training provider stating how the training hours for other types of 'on-the-job' training has been achieved.

Apprenticeship

Pathways – Process Operator/ Technician: Process Engineering Maintenance: Downstream Operations

Evidence:
Copy of a Certificate for the competence qualification –
• Level 3 Diploma in Operations and Technical Support in the Process Industries or
• Level 3 NVQ Diploma in Process Industries Operations or
• Level 3 NVQ Diploma in Process Engineering Maintenance or
• Level 3 Diploma in Downstream Control Room Operations or
• Level 3 Diploma in Downstream Field Operations
Copy of any certificates for any training courses attended
Copy of any completed assessor/ monitoring reports
Copy of any signed declaration from the training provider stating how the training hours for other types of 'on-the-job' training has been achieved.

Wider key skills assessment and recognition (Wales)

Improving own learning and performance

The wider key skill of "Improving own learning and performance", whilst not assessed as part of this framework, is embedded within the learning undertaken in the mandatory units of the competence qualification.

Working with others

The wider key skill of "Working with others", whilst not assessed as part of this framework, is embedded within the learning undertaken in the mandatory units of the competence qualification.

Problem solving

The wider key skill of "Problem solving", whilst not assessed as part of this framework, is embedded within the learning undertaken in the mandatory units of the competence qualification.

Additional employer requirements

None

apprenticeship
FRAMEWORKS ONLINE

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www.apprenticeshipframeworksonline.semta.org.uk