edexcel

Specification

Edexcel NVQ/competence-based qualifications

Edexcel Level 2 NVQ Diploma in Combined Working Practices (QCF)

Edexcel Level 3 NVQ Diploma in Combined Working Practices (QCF)

First registration October 2011

A PEARSON COMPANY

Edexcel, a Pearson company, is the UK's largest awarding organisation offering vocational and academic qualifications and testing, to employers, training providers, colleges, schools, and other places of learning in the UK, and in over 85 countries worldwide.

Our specialist suite of qualifications includes NVQs, Apprenticeships, WorkSkills, Functional Skills, Foundation Learning, as well as our exclusive range of BTECs, from entry level right through to Higher National Diplomas.

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Authorised by Martin Stretton
Prepared by Ana Abreu

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Contents

Qualification titles covered by this specification

This specification gives you the information you need to offer the Edexcel Level 2 and Level 3 NVQ Diplomas in Combined Working Practices (QCF):

Qualification title	Qualification Number (QN)	Accreditation start date
Edexcel Level 2 NVQ Diploma in Combined Working Practices (QCF)	600/3256/X	01/10/11
Edexcel Level 3 NVQ Diploma in Combined Working Practices (QCF)	600/3257/1	01/10/11

These qualifications have been accredited within the Qualifications and Credit Framework (QCF) and are eligible for public funding as determined by the Department for Education (DfE) under Section 96 of the Learning and Skills Act 2000.

The qualification titles listed above feature in the funding lists published annually by the DfE and the regularly updated website. They will also appear on the Learning Aims Reference Application (LARA), where relevant.

You should use the QCF Qualification Number (QN), when you wish to seek public funding for your learners. Each unit within a qualification will also have a unique QCF reference number, which is listed in this specification.

The QCF qualification title and unit reference numbers will appear on learners' final certification document. Learners need to be made aware of this when they are recruited by the centre and registered with Edexcel.

Key features of the Edexcel Level 2 and Level 3 NVQ Diplomas in Combined Working Practices (QCF)

These qualifications:

- are nationally recognised
- are based on the Proskills National Occupational Standards (NOS). The NOS, assessment requirements/strategy and qualification structures are owned by Proskills.

The Edexcel Level 2 and Level 3 NVQ Diplomas in Combined Working Practices (QCF) have been approved as components for the Proskills Apprenticeship framework.

What is the purpose of these qualifications?

These qualifications will enable learners to demonstrate competence in a range of responsibilities, covering some engineering as well as processing to support the work carried out. They are designed to assess occupational competence in the workplace where learners are required to demonstrate skills and knowledge to a level required in a processing environment in a variety of contexts.

Who are these qualifications for?

These qualifications are for all learners aged 16 and above who are capable of reaching the required standards.

Edexcel's policy is that the qualifications should:

- be free from any barriers that restrict access and progression
- ensure equality of opportunity for all wishing to access the qualification(s).

What are the benefits of these qualifications to the learner and employer?

These qualifications allow learners to demonstrate competence against National Occupational Standards which are based on the needs of engineering and processing as defined by Proskills, the Sector Skills Council. As such they contribute to the development of skilled labour in the sector.

What is the potential job role for those working towards these qualifications?

- Process operator

What progression opportunities are available to learners who achieve these qualifications?

These qualifications relate to competences identified in the NOS. Once these qualifications have been achieved learners can progress to the next level or broaden their competencies by undertaking a different pathway at the same level. Progression to knowledge-based qualifications is also possible.

Further information is available in *Annexe A*.

What is the qualification structure for the Edexcel Level 2 NVQ Diploma in Combined Working Practices (QCF)?

Individual units can be found in the *Units* section.

To achieve the Edexcel Level 2 NVQ Diploma in Combined Working Practices (QCF) learners must complete all 6 mandatory units in Group A to achieve a total of 22 credits; plus 2 optional units from Group B and 1 optional unit from Group C to achieve a minimum total of 37 credits.

	Units	**Level**	**Credit**	**GLH**
	A – mandatory units			
	Credit value required: minimum 22.			
Unit 1	R/502/8243 – Support the Achievement of Work Objectives	2	3	14
Unit 2	Y/502/8244 – Support Own and Others' Improvement in the Work Environment	2	3	12
Unit 3	J/502/8241 – Identify and Respond to Process Problems	3	5	24
Unit 4	D/502/8245 – Respond to Accidents, Hazardous Incidents and Emergencies	3	5	38
Unit 5	A/601/5867 – Ensure Responsibility for Actions to Reduce Risks to Health and Safety	3	4	38
Unit 6	Y/502/8499 – Make Sure Own Actions Within the Workplace Aim to Protect the Environment	2	2	16
	B – optional units			
	Credit value required: minimum 15.			
Unit 7	J/502/8093 – Run Machine Led Process Operations, Which are Under Process Control	3	6	28
Unit 8	L/502/8094 – Separate and Dispose of Processing Materials, By-products and Wastes	2	4	20
Unit 9	R/502/8095 – Move Loads for Processing	2	4	32
Unit 10	Y/502/8096 – Exchange Responsibility for Control of Process Operations	2	2	8
Unit 11	R/601/9388 – Carry Out Sampling Operations for Scientific or Technical Tests	2	5	42
Unit 12	D/601/3089 – Producing Packaged Products	2	15	60
Unit 13	J/601/7931 – Assemble Orders for Dispatch in Logistics Operations	2	3	12
Unit 14	F/601/9385 – Carry Out Simple Scientific or Technical Tests Using Manual Equipment	2	7	59

	Units	Level	Credit	GLH
Unit 15	J/601/9386 – Carry Out Simple Scientific or Technical Tests Using Automated Equipment	2	10	70
Unit 16	A/502/8141 – Produce Process Outcomes Using Manual Operations	2	4	24
Unit 17	F/502/8240 – Prepare Materials for Processing According to Instructions	2	3	16
	C – optional units			
Unit 18	D/502/8097 – Carry Out Planned Maintenance Procedures on Process Equipment	2	3	20
Unit 19	H/502/8098 – Adjust Process Equipment to Meet Operating Requirements	2	3	16
Unit 20	K/502/8099 – Analyse and Interpret the Results of Tests on Process Products or Equipment	2	3	16
Unit 21	J/502/8238 – Contribute to the Improvement of Routine Working Practices	3	4	20
Unit 22	L/502/8144 – Change Process Systems to Meet Requirements	3	5	24
Unit 23	J/502/8143 – Operate Programmable Processes	2	4	28
Unit 24	M/502/8184 – Maintain the Condition of Process Equipment	2	4	24
Unit 25	T/502/8185 – Contribute to the Provision of Ancillary Systems	3	4	20

What is the qualification structure for the Edexcel Level 3 NVQ Diploma in Combined Working Practices (QCF)?

Individual units can be found in the *Units* section.

To achieve the Edexcel Level 3 NVQ Diploma in Combined Working Practices (QCF) learners must complete all 7 mandatory units in Group A to achieve a total of 27 credits; plus 1 optional unit from Group B, 1 optional unit from Group C and 1 optional unit from Group D to achieve a minimum total of 42 credits.

In Group D if *Unit 41: Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments* is chosen, *Unit 42: How to Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments* must also be completed and vice versa.

Optional units may be taken from Group E but are not required for the qualification.

	Units	**Level**	**Credit**	**GLH**
	A – mandatory units			
	Credit value required: minimum 27.			
Unit 26	A/502/8236 – Rectify Process Problems	3	6	32
Unit 21	J/502/8238 – Contribute to the Improvement of Routine Working Practices	3	4	20
Unit 27	F/502/8237 – Contribute to the Efficiency and Effectiveness of Process and Manufacturing Operations	2	2	8
Unit 4	D/502/8245 – Respond to Accidents, Hazardous Incidents and Emergencies	3	5	38
Unit 5	A/601/5867 – Ensure Responsibility for Actions to Reduce Risks to Health and Safety	3	4	38
Unit 28	F/600/9469 – Manage Personal Development	2	4	20
Unit 6	Y/502/8499 – Make Sure Own Actions Within the Workplace Aim to Protect the Environment	2	2	16
	Optional units			
	Credit value required: minimum 15.			
	B – optional units			
	Credit value required: minimum 5.			
Unit 29	A/502/8222 – Oversee Complex Operations	4	9	48
Unit 30	A/502/8186 – Carry Out Complex Manual Operations	3	5	32
Unit 31	F/502/8187 – Establish the Conditions for a Process Operation	3	5	24
Unit 32	J/502/8188 – Optimise Standard Operations Which are Under Process Control	3	5	28

	Units	Level	Credit	GLH
	C – optional units			
	Credit value required: minimum 3.			
Unit 33	K/601/9719 – Carry Out Scientific or Technical Testing Operations	3	12	57
Unit 34	R/502/8131 – Plan Process Activities	3	5	28
Unit 35	Y/502/8132 – Test and Maintain the Performance of a Computer Controlled Process Operation	3	4	24
Unit 18	D/502/8097 – Carry Out Planned Maintenance Procedures on Process Equipment	2	3	20
Unit 19	H/502/8098 – Adjust Process Equipment to Meet Operating Requirements	2	3	16
Unit 36	D/502/8133 – Diagnose Faults in Process Equipment	3	4	24
Unit 37	H/502/8134 – Provide Operational Support to Users of Process Equipment	3	6	36
	D – optional units			
	Credit value required: minimum 2.			
Unit 10	Y/502/8096 – Exchange Responsibility for Control of Process Operations	2	2	8
Unit 38	Y/600/9669 – Plan, Allocate and Monitor Work of a Team	3	5	25
Unit 39	K/502/8135 – Prepare and Issue Written Procedures	2	3	16
Unit 40	M/600/9600 – Set Objectives and Provide Support for Team Members	3	5	35
Unit 41	M/600/5224 – Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments	3	5	10
Unit 42	T/600/5225 – How to Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments	4	5	42
Unit 43	L/600/9636 – Support Team Members in Identifying, Developing and Implementing New Ideas	3	4	20
	E – optional units			
	Credit value required: minimum 4.			
Unit 44	F/502/8139 – Reduce the Risks to Health, Safety and the Environment in the Workplace	3	4	20
Unit 45	T/502/8140 – Monitor Procedures to Safely Control Work Operations	3	5	28
Unit 46	Y/502/8146 – Promote a Health and Safety Culture in the Workplace	4	7	48

How are the qualifications graded and assessed?

The overall grade for each qualification is a 'pass'. The learner must achieve all the required units within the specified qualification structure.

To pass a unit the learner must:

- achieve **all** the specified learning outcomes
- satisfy **all** the assessment criteria by providing sufficient and valid evidence for each criterion
- show that the evidence is their own.

The qualifications are designed to be assessed:

- in the workplace or
- in conditions resembling the workplace, as specified in the Assessment requirements/Strategy for the sector, or
- as part of a training programme.

Assessment requirements/Strategy

The Assessment requirements/Strategy for these qualifications have been included in *Annexe D*. They have been developed by Proskills in partnership with employers, training providers, awarding organisations and the regulatory authorities. The assessment strategy includes details on:

- criteria for defining realistic working environments
- roles and occupational competence of assessors, expert witnesses, internal verifiers and standards verifiers
- quality control of assessment
- evidence requirements.

Evidence of competence may come from:

- **current practice** where evidence is generated from a current job role
- a **programme of development** where evidence comes from assessment opportunities built into a learning/training programme whether at or away from the workplace
- the **Recognition of Prior Learning (RPL)** where a learner can demonstrate that they can meet the assessment criteria within a unit through knowledge, understanding or skills they already possess without undertaking a course of learning. They must submit sufficient, reliable and valid evidence for internal and standards verification purposes. RPL is acceptable for accrediting a unit, several units or a whole qualification
- a **combination** of these.

It is important that the evidence is:

Valid	relevant to the standards for which competence is claimed
Authentic	produced by the learner
Current	sufficiently recent to create confidence that the same skill, understanding or knowledge persist at the time of the claim
Reliable	indicates that the learner can consistently perform at this level
Sufficient	fully meets the requirements of the standards.

Types of evidence

To successfully achieve a unit, learners must gather evidence which shows that they have met the required standard in the assessment criteria. Evidence can take a variety of different forms including the examples below. Centres should refer to the assessment strategy for information about which of the following are permissible.

- direct observation of the learner's performance by their assessor (O)
- outcomes from oral or written questioning (Q&A)
- products of the learner's work (P)
- personal statements and/or reflective accounts (RA)
- outcomes from simulation, where permitted by the assessment strategy (S)
- professional discussion (PD)
- assignment, project/case studies (A)
- authentic statements/witness testimony (WT)
- expert witness testimony (EPW)
- evidence of Recognition of Prior Learning (RPL).

The abbreviations may be used for cross-referencing purposes.

Learners can use one piece of evidence to prove their knowledge, skills and understanding across different assessment criteria and/or across different units. It is, therefore, not necessary for learners to have each assessment criterion assessed separately. Learners should be encouraged to reference the assessment criteria to which the evidence relates.

Evidence must be made available to the assessor, internal verifier and Edexcel standards verifier. A range of recording documents is available on the Edexcel website www.edexcel.com. Alternatively, centres may develop their own.

Centre recognition and approval

Centre recognition

Centres that have not previously offered Edexcel qualifications need to apply for and be granted centre recognition as part of the process for approval to offer individual qualifications. New centres must complete both a centre recognition approval application and a qualification approval application.

Existing centres will be given 'automatic approval' for a new qualification if they are already approved for a qualification that is being replaced by the new qualification and the conditions for automatic approval are met. Centres already holding Edexcel approval are able to gain qualification approval for a different level or different sector via Edexcel online.

Approvals agreement

All centres are required to enter into an approvals agreement which is a formal commitment by the head or principal of a centre to meet all the requirements of the specification and any linked codes or regulations. Edexcel will act to protect the integrity of the awarding of qualifications, if centres do not comply with the agreement. This could result in the suspension of certification or withdrawal of approval.

Quality assurance

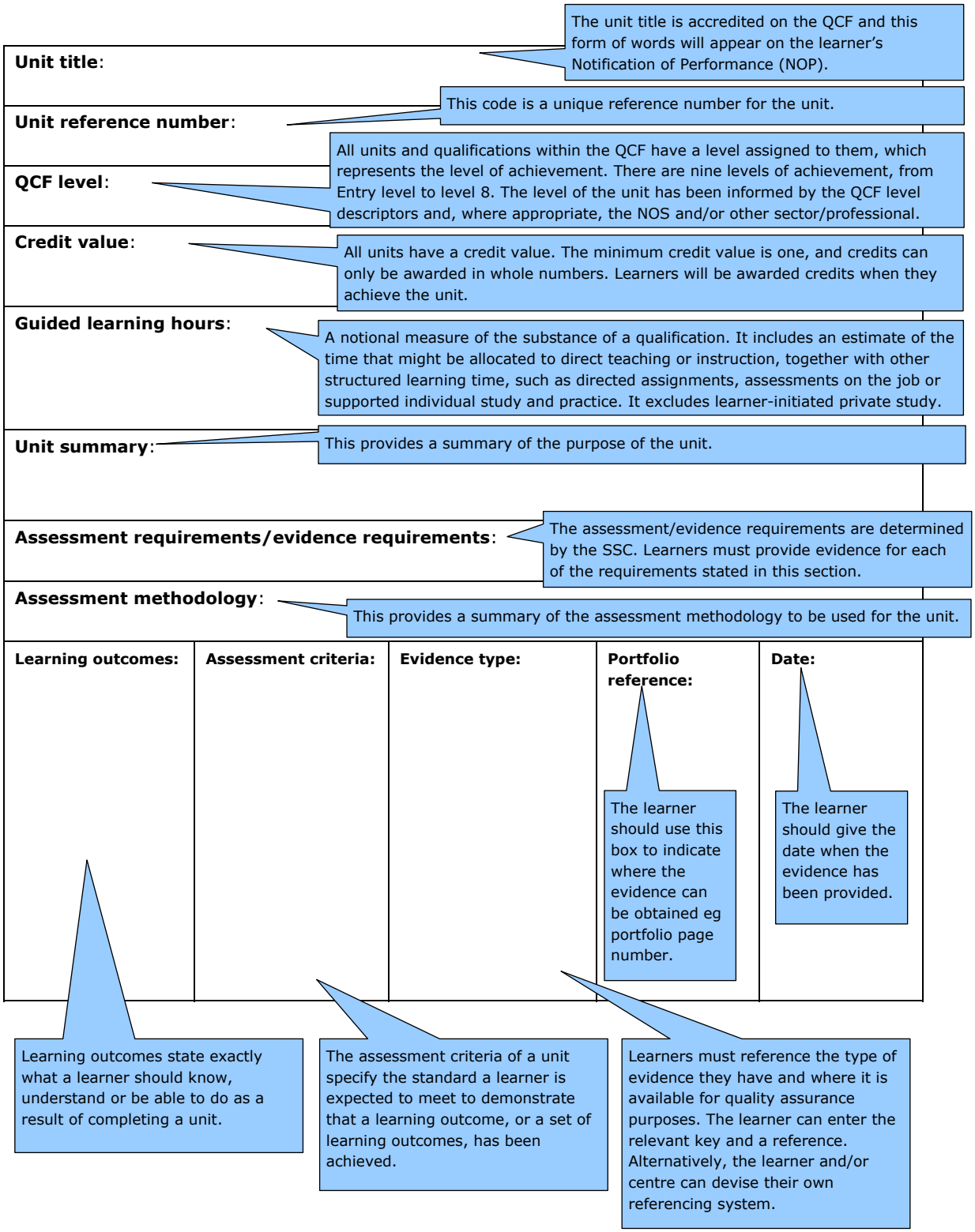
Detailed information on Edexcel's quality assurance processes is given in *Annexe B*.

What resources are required?

Each qualification is designed to support learners working in the engineering and processing sector. Physical resources need to support the delivery of the qualifications and the assessment of the learning outcomes and must be of industry standard. Centres must meet any specific resource requirements outlined in *Annexe D: Assessment requirements/Strategy*. Staff assessing the learner must meet the requirements within the overarching assessment strategy for the sector.

Unit format

Each unit in this specification contains the following sections.



Units

Unit 1: Support the Achievement of Work Objectives

Unit reference number: R/502/8243

QCF level: 2

Credit value: 3

Guided learning hours: 14

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in supporting the achievement of work objectives within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to find information about work and work objectives	1.1	Explain where to find the information needed about work objectives			
		1.2	Describe how to make sure the information is complete and accurate			
		1.3	Describe who to obtain clarification from if information is incomplete or unclear			
2	Know how to keep records of work	2.1	Explain what sorts of records are kept about work and how to complete them			
		2.2	Describe where records are kept about work and who has access to them			
3	Know how to make sure resources are available and requisitioned	3.1	Explain what resources are used			
		3.2	Describe how to identify what resources will be needed for a given activity			
		3.3	Explain what the requisition procedures are			
4	Know how to make effective use of resources	4.1	Describe an individual's responsibilities for taking care of resources allocated to them			
		4.2	Explain who to refer resource problems to			
5	Collect information about the work and work objectives	5.1	Collect all information needed to carry out the work objectives given, before starting any tasks			
		5.2	Ensure the information is complete, accurate, up to date, and available when required			
6	Keep records of the work in progress	6.1	Keep accurate, up to date and complete records of the work in progress			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
7	Make sure resources are available and requisitioned	7.1	Confirm that the resources needed are available for use before starting a task			
		7.2	Use the correct procedure to requisition resources			
8	Make effective use of resources	8.1	Perform tasks efficiently, making good use of time and resources			
		8.2	Avoid damage or loss of resources			
9	Seek clarification from appropriate person when required	9.1	Seek clarification when information is incomplete or inaccurate			
		9.2	Obtain and confirm work priorities for work objectives			
		9.3	Report any problems that cannot immediately be solved			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 2: Support Own and Others' Improvement in the Work Environment

Unit reference number: Y/502/8244

QCF level: 2

Credit value: 3

Guided learning hours: 12

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in supporting own and others' improvement in the work environment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know the standards of work that are expected	1.1	Explain how to find out about the standards of work that are expected of individuals			
2	Know what development activities are available and why they are important	2.1	Describe what support is available to help with learning and development			
		2.2	Give examples of the types of individual and group development activities that are available to take part in			
		2.3	Describe why development at work is important from a business and an individual's point of view			
3	Know how to give and receive feedback	3.1	Describe how to work with others to improve individual performance			
		3.2	Describe how to give constructive feedback			
		3.3	Describe how to communicate effectively with others			
		3.4	Explain the importance of team members supporting each other			
4	Meet the standards of work that are expected	4.1	Ensure own work is to the standard expected			
		4.2	Give correct and up-to-date information about expected work standards			
5	Take an active part in development activities	5.1	Complete the development activities set, on time and to the standard expected			
		5.2	Respond positively when others ask for help with a development activity			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
6	Be able to give and receive feedback	6.1	Accept and respond positively to feedback from others			
		6.2	Give constructive feedback when others ask for comments and advice			
7	Use support provided effectively	7.1	Accept and respond to support and advice from others			
		7.2	Put into practice advice when appropriate			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 3: Identify and Respond to Process Problems

Unit reference number: J/502/8241

QCF level: 3

Credit value: 5

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in identifying and responding to process problems within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know the types of potential process problems that could occur	1.1 Explain the work activities undertaken and potential process problems that could occur 1.2 Explain what process equipment and systems are used within the process and their functions 1.3 Explain what types of materials are used and what happens to materials as they are processed 1.4 Detail what early warning signs to problems exist			
2 Know the procedures to respond to potential process problems that could occur	2.1 Explain what the quality standards are 2.2 Explain what interventions should be applied and who should apply them			
3 Know how to record details of problems and the actions taken to respond to them	3.1 Describe what records are kept 3.2 Explain what documentation needs to be completed			
4 Identify problems and their nature correctly	4.1 Identify when a problem has occurred promptly and correctly within operating guidelines 4.2 Ensure decisions, when a problem has occurred, are based on the correct quality specifications for the process operation			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Select and use the correct procedures to respond to problems	5.1	Follow the correct procedure according to the problem			
		5.2	Correctly follow all relevant regulations			
		5.3	Inform relevant person immediately if there are problems carrying out procedure			
		5.4	Seek advice of others if in doubt about the nature of the problem or how to respond to the problem			
6	Record details of problems and the actions taken to respond to them	6.1	Complete relevant documentation accurately and correctly			
		6.2	Maintain accurate records of activity			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 4: Respond to Accidents, Hazardous Incidents and Emergencies

Unit reference number: D/502/8245

QCF level: 3

Credit value: 5

Guided learning hours: 38

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in responding to accidents, hazardous incidents and emergencies within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to comply with organisational procedures for hazardous incidents, accidents and emergencies	1.1 State the organisational procedures for hazardous incidents, accidents and emergencies including the following: – fire – contamination (eg leaks, spillages, gas emission) – accident and injury to persons – explosion 1.2 Outline the appropriate first response to casualties 1.3 Identify who to report hazardous incidents, accidents and emergencies to 1.4 State what alarm systems are used, when to use them and the actions to take 1.5 Describe the location of and, where appropriate, the use of emergency equipment			
2 Know how to act within the limits of own responsibility	2.1 State own responsibilities during emergencies 2.2 Identify potential hazardous incidents within own area of responsibility and the actions to be taken			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Act on the identification of an accident or hazardous incident	3.1	Identify the nature, locations and scope of the accident or hazardous incident			
		3.2	Request appropriate assistance without delay on discovering either an accident or hazardous incident			
		3.3	Take actions to limit further injury or damage			
		3.4	Report accidents and hazardous incidents promptly to the responsible person in the work area			
4	Respond to emergencies	4.1	Comply fully and promptly with emergency response procedures if an emergency alarm is given			
		4.2	Follow appropriate procedures after the situation has been assessed			
5	Report hazardous incidents, accidents and emergencies	5.1	Provide accurate and complete information on accidents and hazardous incidents as required by organisational procedures			
		5.2	Complete all relevant documentation clearly and accurately			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 5: Ensure Responsibility for Actions to Reduce Risks to Health and Safety

Unit reference number: A/601/5867

QCF level: 3

Credit value: 4

Guided learning hours: 38

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in ensuring responsibility for actions to reduce risks to health and safety within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Be able to identify the hazards and evaluate the risks in the workplace	1.1	Identify workplace instructions that are relevant to them and their job role			
		1.2	Identify working practices and hazards in the workplace that could be harmful			
		1.3	Evaluate the hazards and prioritise in risk order			
		1.4	Report hazard(s) to the responsible person			
2	Be able to reduce the risks to health and safety in the workplace	2.1	Perform work activities at own level of competence in accordance with identified health and safety: – workplace policies – instructions and procedures – suppliers' and manufacturers' information and – relevant legal requirements			
		2.2	Manage hazards in accordance with workplace instructions and legal requirements			
		2.3	Report any differences between workplace instructions and supplier/manufacturer instructions			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to reduce risks to health and safety in the workplace	3.1 Explain their responsibility in remaining alert to hazards and risks 3.2 Describe own responsibilities and scope for action in controlling risk 3.3 Explain the importance of adhering to health and safety policies and practices 3.4 Describe where and when to get additional health and safety assistance 3.5 Describe the importance of personal presentation and behaviour in maintaining health and safety in the workplace			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 6: Make Sure Own Actions Within the Workplace Aim to Protect the Environment

Unit reference number: Y/502/8499

QCF level: 2

Credit value: 2

Guided learning hours: 16

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in making sure own actions within the workplace aim to protect the environment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to identify the risks to the environment arising as a result of workplace activities	1.1 Explain the legislation relating to environmental matters which affect own workplace 1.2 Describe own responsibilities for the environment, as defined by any specific legislation covering the job role 1.3 Describe the particular risks to the environment which may be present in the workplace and/or in own job role 1.4 Explain how to use resources and materials effectively and efficiently 1.5 Describe the importance of remaining alert to the presence of hazards to the environment in the whole workplace 1.6 Explain the importance of dealing with, or promptly reporting, risks to the environment 1.7 Describe the substances and processes categorised as hazardous to the environment 1.8 Explain workplace instructions, precautions and procedures relating to the control of risks to the environment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Know how to minimise risks to the environment arising as a result of workplace activities	2.1 Describe the responsibilities for items (materials/equipment) which can be hazardous to the environment detailed in own job description 2.2 Describe the responsible people to whom to report environmental matters 2.3 Explain the specific workplace environmental instructions covering own job role 2.4 Describe the suppliers', manufacturers' and workplace instructions for the use of equipment, materials and products which can be hazardous to the environment 2.5 Describe working practices for own job role 2.6 Explain the correct handling instructions for materials which can be hazardous to the environment 2.7 Explain own responsibility for controlling hazards to the environment 2.8 Describe workplace instructions for handling hazards to the environment which they are unable to deal with			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Identify the risks to the environment arising as a result of workplace activities	3.1 Identify the people in the workplace to whom environmental matters should be reported 3.2 Keep up to date on environmentally-friendly working practices which are relevant to own workplace 3.3 Identify any current working practices in own job role which could cause harm to the environment 3.4 Identify any materials, products or equipment used in any part of own job role which could cause harm to the environment 3.5 Report any differences between legal regulations and workplace instructions and the actual use of materials or products hazardous to the environment 3.6 Promptly report to the people responsible for environmental matters the hazards which present high risks			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Minimise risks to the environment arising as a result of workplace activities	4.1 Follow the relevant legal requirements and workplace environmental instructions for own job role 4.2 Within own capability and the scope of own job responsibilities, control the environmental hazards 4.3 Promptly report risks to the environment that they are unable to deal with 4.4 Pass on any suggestions for limiting risks to the environment to the responsible person 4.5 Follow suppliers', manufacturers' and workplace instructions for the safe use and storage of materials and products 4.6 Follow the correct instructions for handling materials and products which can be hazardous to the environment 4.7 Follow the correct instructions for disposing of materials and products which can be hazardous to the environment			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 7: Run Machine Led Process Operations, Which are Under Process Control

Unit reference number: J/502/8093

QCF level: 3

Credit value: 6

Guided learning hours: 28

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in running machine led process operations, which are under process control within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to prepare to run a machine led process operation	1.1	Explain what the main functions of process equipment and systems are and what types of services are used by process equipment and systems			
		1.2	Describe what materials are used in different processes			
		1.3	Explain where to get the specification for a given job and how to read the specification			
		1.4	Explain how equipment and systems are set up to meet a given specification			
		1.5	Explain what start-up checks should be carried out to make sure that the equipment and systems are fit for use and there are no faults or defects			
2	Know how to run and monitor a machine led process operation	2.1	Describe what happens to materials as they are processed			
		2.2	Explain what hazards to people and the environment arise from the materials			
		2.3	Describe how to monitor the product and process according to instructions			
		2.4	Describe what types of problems can arise with the process and what early warning signs there are			
		2.5	Explain what interventions should be applied, and by whom			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to conclude a machine led process operation	3.1	Explain what procedures to follow to shut down a process			
		3.2	Explain what parts of a system and its services may require to be isolated			
4	Know the safety, health and environmental standards within a machine led process operation	4.1	Explain what safety standards apply to the process			
		4.2	Describe what the safety, health and environmental procedures are for the materials in use			
		4.3	Describe what risks are associated with the working environment and what risk control measures are in place, together with how to comply with them			
		4.4	Describe what personal protective equipment is required			
5	Make sure that the conditions are right for the operation to begin	5.1	Access the correct operating procedures for the specification to be achieved			
		5.2	Check and confirm that materials of the specified quality and amount are available			
		5.3	Check that the equipment has been set for the production run and is ready to start			
		5.4	Inform others, clearly, when the process is ready and about to begin			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
6 Run and monitor a machine led process operation	6.1 Monitor the product and process according to instructions, following the correct operating procedures to respond to any problems with the equipment or materials 6.2 Follow given procedures to determine whether the specification is being met 6.3 Identify, where applicable, when a process is out of specification and take the action specified in instructions 6.4 Maintain production schedules			
7 Conclude a machine led process operation	7.1 Shut down and isolate equipment safely, when required, according to the instructions 7.2 Remove residual and waste materials into suitable storage, handling them safely to avoid loss and contamination 7.3 Clear and clean equipment where this is needed before it can be used again 7.4 Visually check whether the equipment and system have any faults and defects 7.5 Advise the relevant superior that the operation has been concluded			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
8 Follow all safety, health and environment procedures for the operation	8.1 Follow the safety, health and environmental procedures for set up, running, monitoring and shut down of the operation			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 8: Separate and Dispose of Processing Materials, By-products and Wastes

Unit reference number: L/502/8094

QCF level: 2

Credit value: 4

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in separating and disposing of processing materials, by-products and wastes within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to separate part-processed materials, excess materials, recoverable by-products and wastes from the process	1.1 Explain what materials are used in different processes 1.2 Explain what happens to materials as they are processed 1.3 Explain what the definitions are of the following sorts of wastes – hazardous, non-hazardous, environmentally sensitive, environmentally inert 1.4 Explain why processed, part-processed materials, excess materials and recoverable by-products should be separated out as they are produced 1.5 Explain what sorts of containment and storage are used for processed, part-processed materials, excess materials and recoverable by-products 1.6 Explain what sorts of waste handling containers and equipment are used in the processing industry 1.7 Explain why it is important to minimise the loss of good product when separating and removing wastes			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
2	Know how to handle materials and respond to problems	2.1	Describe what hazards to people and the environment arise from mishandling and misprocessing of materials			
		2.2	Describe what precautions and procedures should be applied when handling materials at each stage of the process and in storage			
		2.3	Explain what action to take if there is a spillage, leakage or emission of wastes			
3	Know how to keep accurate records and keep other people informed	3.1	Explain what records are kept about the removal and handling of processed, part-processed materials, excess materials and recoverable by-products			
		3.2	Describe what type of information is given on waste identification labels			
4	Know how to comply with safety, health and environmental standards	4.1	Explain what safety standards apply to the process environment			
		4.2	Explain what types of risks are present in the process environment			
		4.3	Explain what risk control measures are in place			
		4.4	Describe what personal protective equipment requirements are appropriate to different processing tasks			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Separate part-processed materials, excess materials, recoverable by-products and wastes from the process	5.1	Separate out processed materials, part-processed materials, excess materials and recoverable by-products at the most effective stages in the process			
		5.2	Remove processed, part-processed and excess materials and recoverable by-products to the right streams			
		5.3	Separate wastes out in such a way that as little as possible good product is removed			
		5.4	Carry out waste removal with as little disruption as possible to the process			
6	Handle materials safely and take action should problems occur	6.1	Handle materials and by-products safely and in ways that prevent them from being damaged, spilled or contaminated			
		6.2	Keep spillage of waste materials to a minimum			
		6.3	Clean up any spillages and contamination promptly			
		6.4	Report any problems with the materials within own responsibility promptly and accurately			
7	Keep accurate records and keep other people informed	7.1	Keep up to date, accurate and complete records of the quantity, quality and source of separated materials and by-products			
		7.2	Tell other people involved with the process clearly when waste separation and removal activities are to be carried out which may affect them			
		7.3	Record the removal of waste accurately			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
8 Work safely at all times, complying with health and safety and other relevant regulations and guidelines	8.1 Follow all safety, health and environmental procedures which apply to waste handling 8.2 Use the correct waste handling route as specified in safe working practices			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 9: Move Loads for Processing

Unit reference number: R/502/8095

QCF level: 2

Credit value: 4

Guided learning hours: 32

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in moving loads for processing within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1	Describe own responsibilities under the health and safety statutory requirements – health and safety at work; lifting and handling techniques; use of personal protective equipment; handling hazardous substances; approved reporting procedures (statutory, organisational and emergency)			
		1.2	Explain the approved procedures and practices in the context of the operations, the work activity and the workplace environment – organisational, regulatory, emergency, operational			
		1.3	Describe the relevant appropriate persons to inform and report problems to and conditions outside own responsibility			
		1.4	Explain the relevant record keeping and reporting procedures and practices			
2	Know the methods and techniques for moving loads	2.1	Explain the legislative requirements for the use of lifting and handling equipment			
		2.2	Describe where relevant types of information and instruction sources for the work activity can be found			
		2.3	Explain the manual techniques to use for moving loads			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know moving, lifting and handling equipment and how to use it	3.1 Describe types of lifting equipment in use in relation to the work activity 3.2 Explain the coding and identification systems for lifting equipment 3.3 Explain the methods used for signalling and communication 3.4 Explain the types of defects and faults possible with lifting equipment 3.5 Explain the criteria for taking lifting equipment out of use			
4 Know the characteristics of moving loads	4.1 Explain when loads should be moved using equipment 4.2 Describe how load stability, security and weight distribution factors can be established 4.3 Explain the way load characteristics can affect the lifting activity 4.4 Explain how to interpret instructions for the movement of the load 4.5 Describe the relevant personnel involved with the moving activity 4.6 Describe the hazards and conditions which can affect lifting activities 4.7 Describe how to plan the best route for the load to be moved along			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	5.1	Work safely at all times, complying with health and safety and other relevant regulations and guidelines			
		5.2	Work with regard to the health and safety of all			
		5.3	Work under the direction of a supervisor and on own initiative on routine tasks			
		5.4	Work within own responsibility for the quality of work, referring any difficulties to a supervisor			
6	Use moving methods and techniques	6.1	Use manual moving methods and techniques			
		6.2	Use equipment moving methods and techniques			
		6.3	Position the moving equipment so that the weight of the load is evenly distributed			
		6.4	Use power-assisted equipment			
7	Move loads	7.1	Attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage			
		7.2	Confirm that the load is secure before moving			
		7.3	Load with even weight distribution			
		7.4	Load with simple access to lifting points			
		7.5	Move the load over the selected, suitable route			
		7.6	Position and release the load safely in its intended final location			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 10: Exchange Responsibility for Control of Process Operations

Unit reference number: Y/502/8096

QCF level: 2

Credit value: 2

Guided learning hours: 8

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in exchanging responsibility for control of process operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know what information is available and required for exchange of responsibility	1.1	Explain what sort of information is needed by each team member for their individual roles and where this information is kept			
		1.2	Describe what information needs to be recorded and passed on during a handover			
		1.3	Explain why, when no formal handovers take place, it is good practice to make appropriate notes as an aide-memoire			
		1.4	Explain what is involved in communicating effectively with others			
2	Know the handover procedures	2.1	Describe the procedures that are in place for handover and why it is important to follow them			
		2.2	Explain what the responsibilities are of the incoming and outgoing operators during handover			
3	Ensure all information is available	3.1	Make sure that all information needed by the incoming operator is complete, accurate, up to date and available			
		3.2	Identify and chase up any missing or incomplete information which would prevent the incoming operator having all the information needed to take over responsibility			
		3.3	Ask for information on any aspects of the process which require attention			
		3.4	Seek clarification of any information that is unclear			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Follow the handover procedures	4.1 Follow the specified procedures for the type of handover occasion and situation 4.2 Give the incoming operator all necessary information needed to take over responsibility, including any problems 4.3 Confirm that the handover has been completed and that the incoming operator accepts responsibility 4.4 Accept responsibility only once all the information needed to take over effectively has been obtained			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 11: Carry Out Sampling Operations for Scientific or Technical Tests

Unit reference number: R/601/9388

QCF level: 2

Credit value: 5

Guided learning hours: 42

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out sampling operations for scientific or technical tests within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ) in the QCF' which can be downloaded from Semta's website:
www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Laboratory and Associated Technical Activities Level 2 unit assessment strategy which can be downloaded from Semta's website:
www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Carry out sampling operations for scientific or technical tests	1.1 Ensure that their work is carried out in accordance with workplace procedures 1.2 Use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities 1.3 Ensure that the correct equipment and materials for the sampling process are available for use 1.4 Collect samples in the parameters specified in the standard operating procedure 1.5 Collect samples following all of the following operations: – adhering to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations – checking that all the equipment is in a safe and usable working condition (such as undamaged, safety devices in place and operational) – ensuring that sufficient quantities of all required materials are obtained – obtaining all the necessary data, documentation and specifications for the sampling process – collecting and labelling samples in the required quantities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	– cleaning/disposing of sampling equipment and materials appropriately – ensuring that the work area is clear and tidy, and that waste is disposed of in the correct manner – ensuring that safe working practices and procedures are applied at all times 1.6 Collect samples using five of the following parameters: – location for sampling – sample cycle time – sampling access points – sampling frequency – sampling duration – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Carry out sampling operations for scientific or technical tests (continued)	2.1 Label and identify collected samples correctly 2.2 Maintain the condition of the samples and store in the correct location 2.3 Maintain the condition of samples by two of the following methods: – preservation – transportation – aseptic container – other (please specify) 2.4 Communicate the required information about the work done, in accordance with departmental and organisational procedures 2.5 Record and communicate details of work done, to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific workplace documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to carry out sampling operations for scientific or technical tests	3.1 Explain the health and safety requirements of the area in which they are carrying out the scientific or technical activities 3.2 Explain the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities 3.3 Explain the scientific or technical techniques and processes they must use correctly in the workplace 3.4 Explain the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities 3.5 Explain the importance of correct identification, and any unique workplace coding system 3.6 Explain the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.7 Explain the limits of their own authority and to whom they should report if they have problems that they cannot resolve			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Know how to carry out sampling operations for scientific or technical tests (continued)	4.1 Explain the sampling methods and procedures used in the environment where they are taken 4.2 Explain the range of equipment and materials used for sampling in the environment where they are taken 4.3 Explain the documentation and labelling systems that should be used to ensure sample traceability after sampling 4.4 Explain the methods used for keeping records of sampling operations, and why this is important 4.5 Explain the principles and techniques of maintaining the sample integrity following collection 4.6 Describe how to identify defective sampling equipment, and the actions to be taken 4.7 Explain the methods used for the handling, storage and disposal of materials 4.8 Explain the materials and methods used in the sampling process			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 12: Producing Packaged Products

Unit reference number: D/601/3089

QCF level: 2

Credit value: 15

Guided learning hours: 60

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in producing packaged goods within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ) in the QCF' which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Performing Manufacturing Operations Level 2 unit assessment strategy which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Unit specific additional assessment requirements:

Assessment criteria 1.1, 1.2 should be observed and recorded over a period of time.

The use of simulation within a realistic working environment is acceptable for assessment criteria 1.8, 1.9, 2.1, 2.6.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Produce packaged products	1.1 Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines 1.2 Follow the relevant packaging procedures and safety requirements to include all of the following: – health and safety regulations – safe working practices – job instructions – packaging equipment/tool operating instructions – company standards and procedures 1.3 Obtain and follow the correct job instructions and any relevant packaging procedure and quality specifications 1.4 Use the correct packaging tools, equipment, materials for the packaging operations being performed 1.5 Perform packaging operations using one of the following methods: – hand packaging operations – manually operated machine packaging operations – fully automated machine packaging operations – combined packaging operations			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Perform the packaging operation according to instructions and safe operating procedures 1.7 Follow the correct sequence of events in the finishing operation 1.8 Monitor and control the packaging operation and identify any faults, variations or problems that occur 1.9 Make permitted adjustments to solve production faults, variations or problems to related to two of the following: – quality – accuracy – material utilisation – operational safety – manufacturing changes – productivity			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Produce packaged products (continued)	2.1 Report any problems that they cannot solve or are outside their permitted authority to the appropriate person to include one of the following: – supervisor – team leader – quality control 2.2 Minimise any waste during the packaging operation 2.3 Produce finished products which comply with the packaging specification and quality requirements 2.4 Carry out checks of the packaged products to include the following: – completeness of packaging operations and three other checks from the following: – quality of finish and appearance – freedom from damage – freedom from contamination – security of packaging – quantity – volume 2.5 Work to achieve their production targets for both of the following: – output – quality			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Deal appropriately with packaged components and complete any necessary documentation accurately and legibly			
3 Know how to produce packaged products	3.1 Describe the relevant health and safety requirements of the work area in which they are carrying out the packaging operations 3.2 Explain the specific safe working practices, packaging procedures and environmental regulations that need to be observed 3.3 Explain the hazards associated with carrying out the packaging operations and how they can be minimised 3.4 Explain what actions need to be taken in case of emergencies 3.5 Explain what personal protective equipment needs to be used during the packaging activities and where can it be obtained 3.6 Explain how to obtain the necessary job instructions, operating procedures and packaging specifications that are used, and how to interpret them 3.7 Explain what tools and equipment are used for the packaging operations undertaken and how to check that they are in a safe and usable condition 3.8 Explain how to operate, monitor and control the packaging equipment to achieve the required specification			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.9 Explain the specific packaging operations to be performed 3.10 Explain why it is important to follow the specified packaging sequence and procedure at all times			
4 Know how to produce packaged products (continued)	4.1 Explain what methods can be use to minimise waste during packaging operations 4.2 Explain what faults, problems or variations can occur in the packaging operation 4.3 Explain how to identify faults, problems or variations in the packaging operation 4.4 Explain what allowable adjustments they can make to achieve the specification in the packaging operation 4.5 Explain why it is important to report faults, variations or problems that are outside their permitted authority or that they cannot solve 4.6 Explain how to check the quality of the packaged products, against the required quality standards and what tools and equipment are used 4.7 Explain what documentation may need to be completed, and why it is important to complete it accurately and legibly			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.8 Explain what their responsibilities are with regard to the reporting lines and procedures in their working area 4.9 Explain who are the appropriate people and what are their responsibilities within their working area			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 13: Assemble Orders for Dispatch in Logistics Operations

Unit reference number: J/601/7931

QCF level: 2

Credit value: 3

Guided learning hours: 12

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in assembling orders for dispatch in logistics operations within the relevant sector of industry.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to assemble orders for dispatch in logistics operations	1.1 Explain the relevant organisational policies and procedures for assembling orders for dispatch in logistics operations, that relate to: – health, safety and security – personal protective equipment – environmental factors – special requirements – stock recording systems – scheduling 1.2 Describe the characteristics of the order to be assembled 1.3 Explain the handling methods and equipment to be used when assembling the orders 1.4 Identify problems that can occur when assembling orders for dispatch 1.5 Explain appropriate action when dealing with identified problems			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Be able to assemble the orders for dispatch in logistics operations	2.1 Obtain information to assemble the orders for dispatch 2.2 Check that the area used to dispatch goods is clean and clear of obstructions and hazards 2.3 Check that the goods are in stock and accessible for assembly 2.4 Assemble the order with the correct type and quantity of goods ready for dispatch, in accordance with the information obtained 2.5 Demonstrate how to maintain the condition of the goods while the order is being assembled			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 14: Carry Out Simple Scientific or Technical Tests Using Manual Equipment

Unit reference number: F/601/9385

QCF level: 2

Credit value: 7

Guided learning hours: 59

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out simple scientific or technical tests using manual equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ) in the QCF' which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Laboratory and Associated Technical Activities Level 2 unit assessment strategy which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Carry out simple scientific or technical tests using manual equipment	1.1 Ensure that their work is carried out in accordance with workplace procedures 1.2 Use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities 1.3 Carry out all of the following operations for manual equipment: – transport samples in the workplace, and store them appropriately – select a suitable work area for the manual tests – select and set up the necessary equipment correctly – use the necessary quantity of sample for the manual tests – dispose of waste safely and correctly – ensure that the test done meet the specification for the required quality and accuracy 1.4 Obtain the appropriate equipment and materials for the manual tests required 1.5 Use one of the following resources: – materials – utilities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Check two of the following conditions for the scientific or technical test: – health and safety environment – time – recording system – cleanliness – external influence giving rise to variations			
2 Carry out simple scientific or technical tests using manual equipment (continued)	2.1 Conduct manual laboratory tests on samples in accordance with the correct procedures and techniques 2.2 Record the results of manual tests in accordance with workplace procedures 2.3 Dispose of waste items from manual laboratory tests in accordance with workplace procedures 2.4 Return equipment and materials that can be used for future testing to the correct storage location 2.5 Communicate the required information about the work done, in accordance with departmental and organisational procedures 2.6 Record and communicate details of work done, to the appropriate people, using: – verbal report			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	Plus one method from the following: – written or typed report – specific workplace documentation – computer-based record – electronic mail			
3 Know how to carry out simple scientific or technical tests using manual equipment	3.1 Explain the health and safety requirements of the area in which they are carrying out the scientific or technical activities 3.2 Explain the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities 3.3 Explain the scientific or technical techniques and processes they must use correctly in the workplace 3.4 Explain the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities 3.5 Explain the importance of correct identification and any unique workplace coding system 3.6 Explain the lines of communication and responsibilities in their department and their links with the rest of the organisation 3.7 Explain the limits of their own authority and to whom they should report if they have problems that they cannot resolve			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.8 Explain the minimum size/volume of sample required for the scientific or technical tests conducted 3.9 Explain the types of sample and container used for transport and scientific or technical testing			
4 Know how to carry out simple scientific or technical tests using manual equipment (continued)	4.1 Describe how to assess if a sample is suitable for analysis 4.2 Describe how to use and take a reading from manual test kits used in the workplace 4.3 Explain the procedure to be followed when samples do not match up with the test output specification or accompanying documentation 4.4 Explain the procedure to be followed when a broken or leaking sample is identified in the workplace 4.5 Explain the procedure to be followed if a hazardous or high risk sample was received in the workplace 4.6 Explain the methods used for numbering and labelling samples in the workplace 4.7 Explain the procedures for storing tested samples when archiving is required 4.8 Explain the factors which might adversely affect the integrity of the sample during storage or transport			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 15: Carry Out Simple Scientific or Technical Tests Using Automated Equipment

Unit reference number: J/601/9386

QCF level: 2

Credit value: 10

Guided learning hours: 70

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out simple scientific or technical tests using automated equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ) in the QCF' which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Laboratory and Associated Technical Activities Level 2 unit assessment strategy which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Carry out simple scientific or technical tests using automated equipment	1.1 Ensure that their work is carried out in accordance with workplace procedures 1.2 Use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities 1.3 Carry out all of the following operations for automated equipment: – transport samples in the workplace and store them appropriately – seek any necessary instruction/training on the operation of the equipment, when appropriate – check that equipment guards are in place and are correctly adjusted – ensure that samples have been loaded correctly and are held securely – check that the operating program for the automated equipment is at the correct start point, and that the samples are at the correct location the test – follow the defined operating procedures for the automated equipment, and apply safe working practices and procedures at all times – confirm with a qualified professional that equipment settings are adjusted, as and when required, to maintain the required accuracy			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	– confirm with a qualified professional that the test results produced meet the required specification for quality and accuracy 1.4 Confirm that the laboratory equipment is set up and ready for operation 1.5 Carry out two of the following equipment checks: – calibration – serviceability – cleanliness and preparation 1.6 Check that the laboratory conditions are appropriate for the tests to be done 1.7 Check two of the following conditions for the scientific or technical test: – health and safety environment – time – recording system – cleanliness – external influence giving rise to variations 1.8 Use one of the following resources: – materials – utilities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Carry out simple scientific or technical tests using automated equipment (continued)	2.1 Follow the defined procedures for starting and running the laboratory equipment 2.2 Load and unload samples from laboratory equipment in accordance with procedures and analyser/equipment specifications 2.3 Deal promptly and effectively with error messages or equipment faults that are within their control and report those that cannot be solved 2.4 Monitor the equipment process and ensure that the output readings are to the required specification 2.5 Shut down the equipment to a safe condition on conclusion of the activities 2.6 Communicate the required information about the work done, in accordance with departmental and organisational procedures 2.7 Record and communicate details of work done, to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific workplace documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to carry out simple scientific or technical tests using automated equipment	3.1 Explain the health and safety requirements of the area in which they are carrying out the scientific or technical activities 3.2 Explain the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities 3.3 Explain the scientific or technical techniques and processes they must use correctly in the workplace 3.4 Explain the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities 3.5 Explain the importance of correct identification and any unique workplace coding system 3.6 Explain the lines of communication and responsibilities in their department and their links with the rest of the organisation 3.7 Explain the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.8 Explain the minimum size/volume of sample required for the scientific or technical tests conducted 3.9 Explain the types of sample and container used for transport and scientific or technical testing 3.10 Describe how to assess if a sample is suitable for analysis			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.11 Describe how to start and shut down the scientific or technical equipment, including what to do in an emergency			
4 Know how to carry out simple scientific or technical tests using automated equipment (continued)	4.1 Explain why is it important to carry out pre-test checks and identify the status of the equipment before starting tests 4.2 Describe how to load samples from the testing equipment and how to initiate sample tests 4.3 Explain the appropriate action to take when sampling or equipment errors occur 4.4 Describe how to unload samples from the test equipment, and how to store them during the testing process 4.5 Explain the procedure to be followed when samples do not match up with the test output specification or accompanying documentation 4.6 Explain the procedure to be followed when a broken or leaking sample is identified in the workplace 4.7 Explain the procedure to be followed if a hazardous or high risk sample is received in the workplace 4.8 Explain the methods used for numbering and labelling samples in the workplace			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.9 Explain the procedures for storing tested samples when archiving is required 4.10 Explain the factors which might adversely affect the integrity of the sample during storage or transport			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 16: Produce Process Outcomes Using Manual Operations

Unit reference number: A/502/8141

QCF level: 2

Credit value: 4

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in producing process outcomes using manual operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know the equipment and materials used for manual operations	1.1	State the types of equipment and materials used			
		1.2	Describe how to recognise possible faults and defects in equipment			
		1.3	Describe a problem that needs maintenance attention			
2	Know how to operate equipment and control outcomes of manual processing	2.1	Explain what adjustments and maintenance can be carried out by the operator and what needs specialist attention			
		2.2	Explain what the outcome specification is			
		2.3	Describe what happens to the materials as they are processed			
3	Know how to leave equipment in a suitable condition after use	3.1	Explain why equipment may need to be dismantled and cleaned after use			
		3.2	Identify where equipment is kept			
		3.3	Describe where to store residual and waste materials			
		3.4	Identify what cleaning materials to use to clean waste and contamination			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know the appropriate safety, health and environmental standards and procedures	4.1	Explain what the safety, health and environmental standards and procedures are for the equipment and materials in use			
		4.2	Describe what risks are associated with the working environment			
		4.3	Describe the risk control measures in place and how to comply with them			
		4.4	Explain what personal protective equipment is required			
		4.5	Describe what specific safety devices are used on the equipment			
5	Prepare equipment and materials for manual operations	5.1	Obtain equipment and materials for the operation			
		5.2	Check and confirm equipment has no obvious faults and is supplied with the correct services for safe and effective operation			
		5.3	Confirm the materials for the operation meet specification			
		5.4	Load the materials safely ready for the operation			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
6	Operate and respond to problems with equipment and materials for manual processing	6.1	Use manual techniques in a safe and effective manner			
		6.2	Monitor the operation in line with standard operating procedures			
		6.3	Identify and follow specified procedures to deal with any variations or problems, with equipment and materials, that arise			
		6.4	Follow the safety, health and environment procedures that apply to the equipment and materials in use			
7	Control the outcomes of manual processing	7.1	Pass on outputs which meet the specification to the next stage in production			
		7.2	Discard any outputs that do not meet specification			
		7.3	Meet production schedules			
8	Leave equipment in a suitable condition after use	8.1	Remove residual waste materials into suitable storage, handling them safely			
		8.2	Clean any waste from equipment and any surrounding work area			
		8.3	Return removable components to the correct storage location			
		8.4	Check equipment for obvious faults or defects			
		8.5	Use correct procedures to call for any equipment maintenance needed			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
9 Keep appropriate records	9.1 Keep process documentation up to date, accurate, complete and stored appropriately			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 17: Prepare Materials for Processing According to Instructions

Unit reference number: F/502/8240

QCF level: 2

Credit value: 3

Guided learning hours: 16

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in preparing materials for processing according to instructions within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to prepare materials	1.1 Describe what materials are used in the process environment 1.2 Explain why material has to be prepared 1.3 Explain where to get the specification for a job and why it is important to make sure the specification is met 1.4 Describe how to read and interpret a specification to prepare materials 1.5 Describe what safety standards apply to the process environment and what personal protective equipment is required 1.6 Explain what risks are associated with the working environment and how to comply with risk control measures			
2 Know how to handle materials in a safe manner	2.1 Describe what hazards to people and the environment arise from materials 2.2 Describe what precautions and procedures should be applied when handling materials and in storage 2.3 Describe what the safety, health and environmental procedures are for the materials in use			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to keep up to date accurate and complete records	3.1	Describe what sort of records are kept and how to complete them			
4	Measure materials	4.1	Obtain and work to the correct instructions and check that any unusual quantities stated in work instructions are correct			
		4.2	Check that the material matches the specification and ensure material quality is maintained			
		4.3	Measure out the quantities required accurately keeping material wastage to a minimum			
		4.4	Use measuring equipment and systems safely and effectively			
5	Prepare material for use	5.1	Obtain and work to the required material specification and control material specification so that requirements are met			
		5.2	Use material handling techniques which are safe and keep wastage to a minimum			
		5.3	Accurately and promptly report any damage, loss or contamination to materials			
		5.4	Check that materials are within specification before transferring them on to the next stage			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
6 Keep up to date, accurate and complete records	6.1 Keep up to date, accurate and complete records			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 18: Carry Out Planned Maintenance Procedures on Process Equipment

Unit reference number: D/502/8097

QCF level: 2

Credit value: 3

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out planned maintenance procedures on process equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1	Describe health and safety legislation, regulations and safe working practices and procedures			
		1.2	Explain the procedures to follow in the event of emergencies or hazardous occurrences			
		1.3	Describe own responsibility for personal safety and that of colleagues			
2	Know how to follow maintenance schedules	2.1	Explain the location of maintenance schedules and related specifications			
		2.2	Describe how to interpret the maintenance schedules and specifications			
		2.3	Explain the maintenance authorisation procedures			
3	Know how to carry out maintenance activities	3.1	Explain the methods to use during maintenance			
		3.2	Explain the maintenance sequence			
		3.3	Describe the resources available for maintenance which are used for different maintenance procedures			
		3.4	Explain the basic care and operating requirements of maintenance equipment			
		3.5	Describe how to report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to complete maintenance records accurately	4.1	Describe the maintenance records required			
		4.2	Explain the importance of updating maintenance records			
		4.3	Explain who to pass maintenance records to			
		4.4	Explain who to report to and what reporting methods to use			
5	Know how to dispose of waste materials	5.1	Describe the waste handling containers and equipment to use			
		5.2	Explain the procedures and working practices to use to dispose of waste safely			
6	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	6.1	Work with regard to personal health and safety and that of others			
		6.2	Work under the direction of a supervisor and on own initiative on routine tasks			
		6.3	Work with responsibility for the quality of own work but referring any difficulties to a supervisor			
7	Follow maintenance schedules	7.1	Work to relevant maintenance schedules			
		7.2	Work within own authority			
8	Carry out maintenance activities	8.1	Carry out maintenance activities to meet requirements			
		8.2	Work within agreed timescales			
		8.3	Report instances where maintenance activities cannot be fully met			
		8.4	Identify defects outside the planned schedule			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
9	Complete relevant maintenance records	9.1	Complete relevant maintenance			
		9.2	Complete relevant records accurately			
		9.3	Pass records to the appropriate person			
10	Dispose of waste materials	10.1	Dispose of waste materials in accordance with safe working practices and approved procedures			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 19: Adjust Process Equipment to Meet Operating Requirements

Unit reference number: H/502/8098

QCF level: 2

Credit value: 3

Guided learning hours: 16

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in adjusting process equipment to meet operating requirements within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1 Explain the health and safety legislation, regulations and safe working practices and procedures to follow 1.2 Describe the procedures to follow in the event of emergencies or hazardous occurrences 1.3 Describe own responsibility for personal safety and that of colleagues 1.4 Explain the limits of own responsibility and authority			
2 Know how to make adjustments	2.1 Describe the methods used during maintenance and adjustment 2.2 Explain the adjustment sequence 2.3 Describe the resources available for maintenance and which are used for different maintenance and adjustment procedures 2.4 Describe the maintenance authorisation procedures			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to confirm that adjusted equipment meets the operating specification	3.1	Describe the location of maintenance schedules and related specifications			
		3.2	Explain how to interpret the maintenance schedules and specifications			
		3.3	Explain the basic care and operating requirements of maintenance equipment			
		3.4	Describe how to report instances where the equipment fails to meet the required performance after adjustments and how to report when there are defects outside the required adjustments, including who to report to and what reporting methods to use			
4	Know how to keep up-to-date documentation	4.1	Describe the records required			
		4.2	Explain the importance of updating records			
		4.3	Describe who to pass records to			
5	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	5.1	Comply with health and safety regulations			
		5.2	Follow the appropriate operating specifications for the equipment being maintained			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
6 Make adjustments	6.1 Carry out the adjustments to process equipment within the limits of personal authority 6.2 Make the required adjustments in the specified sequence and in an agreed timescale 6.3 Confirm that the adjusted equipment meets the required operating specification 6.4 Report any instances where the equipment fails to meet the required performance after adjustments 6.5 Report any identified defects outside the required adjustments			
7 Keep up-to-date documentation	7.1 Maintain documentation in accordance with organisational requirements			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 20: Analyse and Interpret the Results of Tests on Process Products or Equipment

Unit reference number: K/502/8099

QCF level: 2

Credit value: 3

Guided learning hours: 16

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in analysing and interpreting the results of tests on process products or equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1	Describe the health and safety legislation, regulations and safe working practices and procedures			
		1.2	Explain the procedures to follow in the event of emergencies or hazardous occurrences			
		1.3	Explain own responsibilities for personal safety and that of colleagues			
2	Know how to analyse and interpret the results of tests on process products or equipment	2.1	Describe the location of engineering specifications that are approved by the company for the equipment involved			
		2.2	Explain the data provided from tests and which methods can be used to verify data			
		2.3	Describe the importance of making sure that test data is reliable, valid and complete			
		2.4	Describe the analysis methods and procedures which can be applied to test results			
3	Know how to record results appropriately	3.1	Explain the importance of recording the results of the analysis			
		3.2	Describe who to report to and what reporting methods to use			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Analyse and interpret the results of tests on process products or equipment	4.1 Ensure the necessary test data on which to conduct the analysis has been obtained 4.2 Resolve promptly any inconsistencies in the data 4.3 Analyse the data using approved methods and procedures 4.4 Check that the data analysis is accurate and thorough and takes account of the test conditions 4.5 Compare the analysis against the product or asset specification and identify any faults or variations from specification 4.6 Record the results of the analysis in the appropriate format 4.7 Work safely at all times, complying with health and safety and other relevant regulations and guidelines			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____

(*if sampled*)

Unit 21: Contribute to the Improvement of Routine Working Practices

Unit reference number: J/502/8238

QCF level: 3

Credit value: 4

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in contributing to the improvement of routine working practices within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to identify opportunities to improve routine working practices	1.1	Explain why it is important to communicate effectively			
		1.2	Explain how decisions are made			
		1.3	Explain how to identify benefits of improvements			
2	Know how to make realistic suggestions to improving working practices	2.1	Describe the methods available to present recommendations, to whom and when			
		2.2	Explain what contributions to the implementation of improvements can be made			
		2.3	Explain the benefits suggested improvements may bring to working practices			
3	Know safety standards that apply to routine working practices	3.1	Explain the safety standards that apply to the working environment			
		3.2	Explain why safety implications should be taken into account when considering potential improvements			
4	Identify opportunities to improve routine working practices	4.1	Investigate whether working practices are as good as they could be			
		4.2	Base investigations on up-to-date information			
		4.3	Take an active part in discussions about working practices			
		4.4	Take account of safety implications when deciding whether potential improvements could be made to working practices			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Make realistic suggestions to improve working practices	5.1 Make recommendations which are realistic and safe 5.2 Indicate the benefits from suggestions made 5.3 Present recommendations clearly, to the right people at the right time 5.4 Contribute to the implementation of recommendations for improvement which have been accepted			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 22: Change Process Systems to Meet Requirements

Unit reference number: L/502/8144

QCF level: 3

Credit value: 5

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in changing process systems to meet requirements within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to change system settings to meet requirements	1.1 Explain what the main functions are of process equipment and systems 1.2 Describe what procedures should be followed for altering system settings			
2 Know how to change simple and easily removed and replaced system components	2.1 Explain what procedures should be followed for removing and replacing system components under operator control 2.2 Explain how to make sure that replacement components are secure and set correctly			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to optimise a system after changes	3.1 Describe what tests are run after system changes have been made and why it is important to follow the test procedures exactly 3.2 Explain what level of monitoring is required by different processes and what information to gather and when during monitoring 3.3 Explain how to compare data with expected values 3.4 Describe why it is important to follow specified monitoring procedures 3.5 Explain how to maintain control when adjusting system settings to avoid over and under compensations and swings 3.6 Explain what the effects are of under and oversupply situations on the overall efficiency and quality of the operation 3.7 Describe what the input and output specifications are of each process within multiple and integrated operations 3.8 Explain what checks are needed to monitor and maintain multiple and integrated operations 3.9 Describe how to control multiple and integrated processes to achieve an optimum result, making best use of the opportunities, limitations and tolerances applying to each system			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to confirm that the system is functioning	4.1	Explain when a process problem should be considered minor and when it should be considered significant			
		4.2	Describe what sorts of records are kept and how to complete them			
		4.3	Explain how to read and analyse relevant data in tables, printouts and schematics			
		4.4	Explain what conventions are used in the process			
		4.5	Describe what units of measurement are used and what they mean			
5	Change system settings to meet requirements	5.1	Obtain accurate and complete details of the system configuration that is required			
		5.2	Modify settings appropriately to ensure the correct material flow through the process			
6	Change simple and easily removed and replaced system components	6.1	Make sure that the system components to be used are available and in a fit condition for use			
		6.2	Make sure that any changed components are securely connected and set ready for operation			
7	Optimise a system after changes	7.1	Take action promptly should any problems occur			
		7.2	Seek advice and assistance to deal with difficulties which cannot be readily resolved			
		7.3	Work safely, following safety, health and environmental requirements			
		7.4	Keep accurate records of changes to the system configuration			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
8 Confirm that the system is functioning	8.1 Run system tests correctly and make an accurate judgement about how well the system matches the specification on the basis of the information in test results 8.2 Compensate effectively for any deviations from the system specification 8.3 Adjust the system settings in a controlled manner to produce the best possible match to the specification 8.4 Monitor the system running for long enough to be sure that it is stable 8.5 Report that the system is functional and ready for use through the correct channels			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 23: Operate Programmable Processes

Unit reference number: J/502/8143

QCF level: 2

Credit value: 4

Guided learning hours: 28

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in operating programmable processes within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1 Explain the health and safety legislation, regulations and safe working practices and procedures appropriate to the industry 1.2 Describe the safety features incorporated into the processes under their control, including the control system, controlled machinery and the building 1.3 Describe the procedures to follow in the event of emergencies or process deviations which may lead to hazardous occurrences 1.4 State own responsibilities for personal safety and that of colleagues			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
2	Know how to confirm that the equipment is set up and ready for operation	2.1	Describe the procedures to use when changes to the process are required before start-up			
		2.2	Explain the relationship between the process and the schematic process diagrams displayed on the computer			
		2.3	Explain the procedure to use when starting and running the programme/process			
		2.4	Explain the aspects of the process they are required to monitor and record			
		2.5	Describe how to recognise the active stages of the process on the computer display screen			
		2.6	Describe the inspection sequence or checklist to follow in order to confirm that equipment is safely, correctly and accurately set up and ready for operation			
3	Know how to follow procedures for starting and running the operating programme	3.1	Explain the procedures/documentation which set working schedules			
		3.2	Describe the reporting lines and procedures			
		3.3	Describe how a process programme is retrieved and loaded into the control computer for a specific process			
		3.4	Explain how to store process programmes securely			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to control the computer process	4.1	Describe how to control the computer to ensure product conformity			
		4.2	Explain how control parameters affect product quality			
		4.3	Describe product specifications			
		4.4	Describe the common error messages and how to respond to them			
		4.5	Explain the importance of taking action promptly and effectively if errors occur			
		4.6	Describe to whom error messages and equipment faults that cannot be resolved should be reported			
5	Know how to shut down the equipment to a safe condition on conclusion of the activities	5.1	Explain how to ensure the safe condition completion of the equipment at the end of the process			
		5.2	Describe the checks to carry out to ensure that process equipment is safe and ready for set-up for the next job			
		5.3	Explain the tools, integral with the controlled process, which must be replaced, serviced or calibrated before next use			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
6	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	6.1	Work with regard to health and safety of all			
		6.2	Work under the direction of a supervisor and on own initiative			
		6.3	Work within the levels of responsibility for the quality of own work but referring any difficulties to a supervisor			
7	Start and run the operating programme	7.1	Confirm that the equipment is set up and ready for operation			
		7.2	Follow the defined procedures for starting the operating programme			
		7.3	Follow the defined procedures for running the operating programme			
8	Control the computer process	8.1	Control the computer process			
		8.2	Ensure production output is to the required specification			
		8.3	Take action promptly and effectively if error messages or equipment faults occur			
		8.4	Report faults outside own control			
		8.5	Report faults that cannot be solved			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
9 Shut down the equipment	9.1 Shut down the equipment to a safe condition on conclusion of the activities			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 24: Maintain the Condition of Process Equipment

Unit reference number: M/502/8184

QCF level: 2

Credit value: 4

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in maintaining the condition of process equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1 Explain health and safety legislation, statutory regulations and safe working practices and procedures 1.2 Explain the procedures to follow in the event of emergencies or hazardous occurrences 1.3 Explain own responsibilities for personal safety and that of colleagues 1.4 Give the location of maintenance schedules and related specifications 1.5 Describe how to interpret the maintenance schedules and specifications 1.6 Explain the limits of own responsibility and authority			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
2	Know how to remove and replace components	2.1	Explain the adjustment sequence			
		2.2	Describe the resources available for maintenance and which are used for different maintenance and adjustment procedures			
		2.3	Describe the component removal and replacement methods and techniques to use			
		2.4	Describe the components that may have to be removed and replaced, and their functions			
		2.5	Describe the equipment and materials to use during component removal and replacement, and compliance checking			
		2.6	Describe how to use tools and equipment for component removal, replacement and compliance checking			
3	Know how to maintain and store components	3.1	Describe the location of components in the equipment			
		3.2	Explain how to handle components throughout the process			
		3.3	Describe the types of defects which can occur in components and how to recognise them			
		3.4	Explain the labelling conventions to use when storing components and whether this may be for the purposes of disposal, replacement, repair or storage			
		3.5	Explain where to store components for reuse			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to check equipment to identify any defects or variations from the specification	4.1	Describe the methods to use during maintenance and adjustment			
		4.2	Explain the basic care and operating requirements of maintenance equipment			
		4.3	Give the location of engineering drawings and related specifications that are approved by the company for the equipment involved			
		4.4	Explain how to interpret drawings and specifications			
5	Know how to maintain documentation in accordance with requirements	5.1	Explain the records required			
		5.2	Explain the importance of updating records			
		5.3	Explain who to pass records to			
		5.4	Explain who to report to and what reporting methods to use			
6	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	6.1	Work safely at all times, complying with health and safety and other relevant regulations and guidelines			
		6.2	Ensure that any stored energy or substances are released safely and correctly			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
7 Remove components using approved tools and techniques	7.1 Establish, and where appropriate, mark component orientation for reassembly 7.2 Remove the required components using approved tools and techniques 7.3 Take suitable precautions to prevent damage to components, tools and equipment during removal 7.4 Check the condition of the removed components and record those that will require replacing 7.5 Label and store the removed components in an appropriate location 7.6 Store or discard the removed components in accordance with approved procedures			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
8	Replace components using appropriate tools and techniques	8.1	Obtain all the required components and ensure that they are in a suitable condition for replacement and fit for purpose			
		8.2	Ensure that any replacement components used meet the required specification			
		8.3	Take adequate precautions to prevent damage to components, tools and equipment during replacement			
		8.4	Replace the components in the correct sequence using appropriate tools and techniques			
		8.5	Make any necessary settings or adjustments to the components to ensure they will function correctly			
		8.6	Take action promptly and effectively should any problems occur within own area of control and report those that cannot be solved			
9	Check equipment to identify any defects or variations from the specification	9.1	Follow and make appropriate use of the specifications for the product or asset being checked			
		9.2	Use all the correct tools and inspection equipment and check that they are in useable condition			
		9.3	Carry out the checks in an appropriate sequence using approved methods and procedures			
		9.4	Identify and assess any defects or variations from the specifications and take appropriate action			
		9.5	Report completion of compliance activities in line with organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
10 Maintain documentation	10.1 Maintain documentation in accordance with organisational requirements			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 25: Contribute to the Provision of Ancillary Systems

Unit reference number: T/502/8185

QCF level: 3

Credit value: 4

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in contributing to the provision of ancillary systems within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to ensure that the ancillary systems are ready and available	1.1	Describe what ancillary systems are used in the process and what uses they have			
		1.2	Describe how to check that ancillary systems are ready for use			
2	Know how to monitor system operation and condition	2.1	Describe what tests and checks are carried out to make sure that ancillary systems are running correctly			
		2.2	Explain what records are kept and how to complete them			
3	Know how to control the output of systems	3.1	Describe why it is important to make sure that the outputs of ancillary systems meet the specification			
		3.2	Explain how to call for maintenance and specialist support should problems occur			
4	Know how to start up and shut down systems safely	4.1	Explain how to start up, shut down and control ancillary systems			
		4.2	Describe the effects of an emergency shut down			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Know the safety, health and environmental standards to work safely on and around ancillary systems	5.1 Explain the health and safety legislation, regulations and safe working practices and procedures 5.2 Explain own responsibilities for personal safety and that of others 5.3 Describe the risks present in a process environment 5.4 Explain what risk control measures are in place and why it is important to comply with them 5.5 Describe what personal protective equipment requirements are appropriate to different processing tasks 5.6 Explain what alarm systems are used and when to use them 5.7 Explain the procedures to follow in the event of emergencies or hazardous occurrences			
6 Ensure that ancillary systems are ready and available	6.1 Check that ancillary systems are ready for use			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
7	Monitor system operation and condition	7.1	Check the condition of ancillary systems at scheduled intervals during operations			
		7.2	Carry out required operational tests accurately and safely			
		7.3	Ensure the necessary maintenance is carried out to keep systems in working order			
		7.4	Keep accurate, complete and up-to-date records of the condition of ancillary systems			
8	Control the output of systems	8.1	Regulate ancillary systems to produce the outputs needed to support the process			
		8.2	Work in line with the standard operating procedures for the system			
		8.3	Respond promptly to problems with ancillary systems			
		8.4	Ensure that other people working on the process are aware the systems are in operation			
		8.5	Call for specialist support promptly when there are faults and unusual conditions in ancillary systems			
9	Start up and shut down systems safely	9.1	Start up and shut down the operation of ancillary systems to meet production schedules			
		9.2	Shut down and isolate ancillary systems promptly and safely in the case of an emergency			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
10 Work safely on and around ancillary systems	10.1 Maintain safe control of ancillary systems during operation 10.2 Follow the safety, health and environmental procedures relevant to work on and around ancillary systems			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 26: Rectify Process Problems

Unit reference number: A/502/8236

QCF level: 3

Credit value: 6

Guided learning hours: 32

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in rectifying process problems within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know the nature of and understand the significance of process quality problems	1.1 Explain the main functions of process equipment and systems 1.2 Explain how the various parts of a system interact 1.3 Detail the types of services used by process equipment and systems 1.4 Describe what materials are used in the processes 1.5 Explain what process control involves 1.6 Describe the types of problems that can arise with a process and what early warning signs there are			
2 Know the action to take should a problem arise	2.1 Explain the working practices and authorisations that are applicable and where to find out about them 2.2 Describe how to investigate the cause of a problem 2.3 Explain what interventions should be applied, when and by whom 2.4 Explain the level of monitoring required within the process 2.5 Explain the importance of following specified monitoring procedures 2.6 Explain what sort of records are kept and how to complete them			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know the safety standards that apply to the process	3.1	Explain the safety standards that apply to the process environment			
		3.2	Describe the risks that are present in a process environment			
		3.3	Explain any risk control measures that are in place and why it is important to follow them			
		3.4	Describe what personal protective equipment requirements are appropriate to the processing tasks			
4	Know the lines of communication available	4.1	Explain what lines of communication and command should be followed in any given situation			
5	Investigate the nature and significance of process quality problems	5.1	Identify when a problem has occurred promptly			
		5.2	Gather sufficient information to be able to identify the type of problem that has occurred			
		5.3	Use the correct procedures to decide whether the problem needs immediate action or whether it can be allowed to continue until a more convenient time before dealing with it			
		5.4	Use the correct procedures to decide whether the assistance of others will be needed to deal with the problem			
		5.5	Use the correct procedures to decide on the potential cause of the problem			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
6	Take action should a problem arise	6.1	Use all the available information to decide what actions need to be taken			
		6.2	Carry out actions promptly and effectively			
		6.3	Ensure a course of action is taken that will safely limit unwanted effects on the system and process			
		6.4	Ensure that individuals carrying out remedial actions are provided with sufficient detail to make sure the problem can be dealt with effectively			
		6.5	Maintain safety standards at all times			
		6.6	Maintain accurate and complete records of the actions taken			
7	Assess the effectiveness of actions that have been taken	7.1	Gather sufficient information in order to accurately monitor effectiveness of solution			
		7.2	Carry out assessments until the problem has been fully resolved			
		7.3	Use the correct criteria to judge effectiveness of the solution			
		7.4	Modify actions taken if the problem changes or if they do not work as intended			
		7.5	Keep accurate records of the results of the solution			
		7.6	Identify and report any information which may affect the diagnosis and response to similar problems in the future			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 27: Contribute to the Efficiency and Effectiveness of Process and Manufacturing Operations

Unit reference number: F/502/8237

QCF level: 2

Credit value: 2

Guided learning hours: 8

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in contributing to the efficiency and effectiveness of process and manufacturing operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to plan and organise work for process and manufacturing operations	1.1 Explain why it is important to have a clear plan of what to do before starting operation 1.2 Explain how to read and interpret work instructions for process and manufacturing operations 1.3 Explain why some tasks take priority over others			
2 Know how to make use of available information	2.1 Describe the types of information needed by each team member for their role 2.2 Explain where the required information is stored for process and manufacturing operations 2.3 Describe how information is passed to those who need it 2.4 Explain why it is important to make sure that the information provided for a task is accurate, complete and up to date			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to coordinate with others	3.1	Explain how to communicate effectively with others			
		3.2	Explain the importance of team members supporting each other			
		3.3	Explain why effective communications and clear instructions are essential to good working relationships			
		3.4	Describe what an individual can do to support their work colleagues			
		3.5	Explain the importance of resolving a problem in working relationships as soon as possible and by direct discussion			
4	Plan and organise work for process and manufacturing operations	4.1	Find out what priorities apply to different objectives within process and manufacturing operations			
		4.2	Obtain full details of the actions required to meet objectives			
		4.3	Ensure that all the resources required are available in the right quantities and take prompt steps to deal with any shortfall			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Coordinate with others as required	5.1 Tell appropriate person of any difficulties 5.2 Cooperate effectively in tasks requiring interactions with others 5.3 Keep colleagues up to date and accurately informed on aspects of work which may affect them 5.4 Offer support to others where necessary for the achievement of work objectives and quality standards 5.5 Make constructive suggestions on how to overcome difficulties			
6 Make effective use of work resources for process and manufacturing operations	6.1 Work efficiently and safely, making effective use of time available 6.2 Use shared resources in an efficient manner, leaving them in a fit state for others to use			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 28: Manage Personal Development

Unit reference number: F/600/9469

QCF level: 2

Credit value: 4

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in managing personal development within the relevant sector of industry.

Assessment requirements/evidence requirements

Assessment must be carried out in a way that is consistent with the requirements outlined in *Annexe D*.

To pass the unit, learners must meet all of the assessment criteria.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Be able to identify and agree performance requirements of own work role	1.1	Outline work role performance requirements with those they report to			
2	Be able to measure and progress against objectives	2.1	Identify ways that progress will be measured against own work objectives			
3	Be able to identify gaps in skills and knowledge in own performance	3.1	Explain knowledge and skills required for own work role			
		3.2	Identify opportunities and resources available for personal development			
		3.3	Produce a development plan to address own needs and agree with line manager			
4	Be able to carry out and assess activities within own development plan	4.1	Plan activities in own development plan that address identified needs			
		4.2	Collect feedback from colleagues on the result of development activities on own performance			
		4.3	Assess the success of activities carried out as part of own development plan			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 29: Oversee Complex Operations

Unit reference number: A/502/8222

QCF level: 4

Credit value: 9

Guided learning hours: 48

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in overseeing complex operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know the equipment and materials used in the process	1.1 Explain what the main functions are of process equipment and systems 1.2 Describe what types of services are used by process equipment and systems 1.3 Describe what materials are used in different processes 1.4 Explain why a specification is needed for a process, where to get the specification and how to read and interpret a process specification			
2 Know how to initiate complex process operations	2.1 Describe what start-up checks should be carried out to make sure that the equipment and system is fit for use and has no faults or defects 2.2 Describe what should be done to check that the services needed by the equipment and system are operational			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to optimise complex processing operations	3.1 Describe what equipment and system adjustments, plus maintenance can be carried out by the operator and those which need specialist attention 3.2 Explain what precautions and procedures are followed in making equipment and system adjustments off-line and under operational conditions; which sorts of adjustments are made off-line and which under operational conditions 3.3 Explain what information to gather and when 3.4 Explain what the readings should be and what readings to expect and why 3.5 Explain how to compare data with expected values 3.6 Describe which parameters are more critical than others and which parameters can be allowed to fluctuate within a tolerance band 3.7 Explain what interventions should be applied, when and by whom 3.8 Explain what sorts of problems can arise with the process and what early warning signs there are			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to integrate multiple processes	4.1	Explain what differences there are between the control of standard and complex processes			
		4.2	Explain how the various facets of a complex process interact			
		4.3	Explain what level of monitoring is required by different processes			
		4.4	Describe how to control multiple and integrated processes to achieve an optimum result, making best use of the opportunities, limitations and tolerances applying to each system			
		4.5	Describe what checks are needed to monitor and maintain multiple and integrated operations			
5	Know how to conclude complex process operations	5.1	Describe what procedures to follow to shut down a process and why it is important that the correct procedure is followed			
		5.2	Describe what parts of a system and its services may require to be isolated			
		5.3	Explain why equipment and a system may need to be dismantled and cleaned if they are to be used for a different product or specification at a subsequent operation			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
6	Know how to maintain accurate records and how to communicate effectively	6.1	Explain why it is important for team members to support each other effectively			
		6.2	Explain what process control records are kept and why it is important that these are complete and accurate			
		6.3	Describe how to read and analyse relevant data in tables, printouts and schematics			
		6.4	Explain what conventions are used in the process			
7	Know the safety, health and environmental procedures	7.1	Describe why it is important to follow specified monitoring procedures			
		7.2	Explain what safety standards apply to the process environment			
		7.3	Explain what hazards to people and the environment can arise from mishandling and misprocessing of materials			
		7.4	Describe what precautions and procedures should be applied when handling materials at each stage of the process and in storage			
		7.5	Explain what types of risks are present in a process environment			
		7.6	Describe what risk control measures are in place and why it is important to comply with them			
		7.7	Explain what personal protective equipment requirements are appropriate to different processing tasks			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
8 Initiate complex process operations	8.1 Obtain confirmation that the necessary conditions are in place before starting 8.2 Start up the operation according to the operating procedures 8.3 Work effectively with others involved in starting up the operation			
9 Optimise complex processing operations	9.1 Interpret the data correctly to judge whether the process and product are in specification or not 9.2 Check that the process control system is operating properly and, if not, ensure that suitable adjustments are made to meet specifications 9.3 Check the product being produced accurately against the specification and determine any adjustments needed 9.4 Recognise when process parameters could be improved and make adjustments to optimise the quality 9.5 Adjust and balance the settings as necessary to achieve the specification, taking accurate account of the interactions between adjusted parameters 9.6 Respond promptly to variances taking whatever action is needed to keep all critical parameters within specification and achieve an optimum level on parameters with a broad tolerance 9.7 Maintain production rate, resource use and efficiency without loss of product quality			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
10 Take action should any problems occur which affect the process operation	10.1 Identify the probable causes of any problems which occur and take prompt, safe and cost-effective action to deal with them 10.2 Seek immediate advice from specialist colleagues if problems cannot be solved by operator intervention 10.3 Recognise problems accurately which are likely to affect overall efficiency, quality and safety 10.4 Respond promptly to problems, taking whatever action is needed to optimise process integration and maintain the quality of the product			
11 Integrate multiple processes	11.1 Make regular and accurate checks to confirm that the operations are integrated effectively 11.2 Interpret data correctly to judge the status of each process operation and to identify any implications for integration			
12 Conclude complex process operations	12.1 Conclude operations according to standard operating procedures and to meet work schedules 12.2 Make sure that residual and waste materials have been removed into suitable storage 12.3 Clear and clean equipment where this is needed before it can be used again 12.4 Check whether the equipment and system have any visible faults and defects 12.5 Follow the correct procedures to call for any maintenance needed on the equipment and systems			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
13	Maintain accurate records	13.1	Keep process and operational documentation up to date, accurate and complete			
14	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	14.1	Work safely at all times, complying with health and safety and other relevant regulations and guidelines			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 30: Carry Out Complex Manual Operations

Unit reference number: A/502/8186

QCF level: 3

Credit value: 5

Guided learning hours: 32

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out complex manual operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know the process equipment and materials used in manual operations	1.1 Explain the types of equipment that are used in manual operations 1.2 Describe what materials are used in different processes 1.3 Explain what happens to materials as they are processed 1.4 Evaluate what precautions and procedures should be applied when handling materials at each stage of the process 1.5 Explain what conventions are used in the process 1.6 Summarise what units of measurement are used and what they mean 1.7 Explain how to read and analyse relevant data in tables, printouts and schematics			
2 Know how to recognise potential problems	2.1 Explain how to recognise possible faults in equipment from their appearance, sound and smell 2.2 Identify symptoms that indicate a problem that needs maintenance attention 2.3 Explain which equipment adjustments and maintenance can be carried out by the operator and which needs specialist attention			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to operate and respond to problems with equipment	3.1	Explain what procedures to follow to carry out basic maintenance of equipment including the following: – replacement of components – lubrication – tightening of connections – cleaning			
		3.2	Explain what precautions and procedures are followed in making equipment and system adjustments offline and under operational conditions			
		3.3	Summarise what checks should be run through to make sure that equipment is fit for use and has no faults or defects			
		3.4	Explain what sort of adjustments can be made to ensure the right outcomes in manual operations			
		3.5	Explain what level of control is possible with manual operations			
4	Know how to leave equipment in a suitable state following use	4.1	Explain why equipment needs to be dismantled and cleaned after use			
		4.2	Summarise where equipment is kept			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Know how to use process specifications	5.1	Explain what information is normally given in a process specification			
		5.2	Explain where to get the specification for a job			
		5.3	Summarise how to read and interpret a process specification			
6	Know appropriate safety standards for manual operations	6.1	Explain what hazards exist to people and the environment from mishandling and misprocessing materials			
		6.2	Summarise the safety standards that apply to the process environment			
		6.3	Explain what sort of risks are present in a process environment			
		6.4	Explain what risk control measures are in place and why it is important to comply with them			
		6.5	Explain what personal protective equipment is appropriate for different processing tasks			
7	Know how to maintain accurate records	7.1	Explain what process records are kept and why it is important that these are complete and accurate			
8	Interpret specifications and set up equipment accordingly	8.1	Identify the technical and production implications of the specifications to be met			
		8.2	Ensure the correct equipment, to achieve the specified outcome, is selected			
		8.3	Identify the correct configuration of equipment to ensure safe and effective operation			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
9	Operate and respond to problems with equipment	9.1	Ensure equipment has no obvious faults and is supplied with correct services			
		9.2	Identify correct materials for operation			
		9.3	Load the materials safely and securely			
		9.4	Comply with any relevant safety, health and environment procedures applying to the equipment and materials			
10	Monitor operation and respond to problems	10.1	Meet production schedules and make economic use of materials and services			
		10.2	Ensure that prompt action is taken to respond to any problems with the equipment and materials			
		10.3	Use complex hand-based techniques in a safe and effective manner			
		10.4	Monitor the operation in line with standard operating procedures			
		10.5	Recognise variations in the outcomes and make adjustments as required in order to optimise the achievement of specifications			
		10.6	Identify the probable causes of any problems and take effective action to overcome the problem			
		10.7	Seek immediate advice from specialist colleagues if problems cannot be solved			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
11 Leave equipment in a suitable state following use	11.1 Pass on outcomes to the next stage of production safely, discarding any which do not meet specifications 11.2 Remove any residual materials and waste into suitable storage 11.3 Clean equipment and surrounding work areas of waste and contamination using specified cleaning materials and procedures 11.4 Return any removable components to the correct storage locations 11.5 Ensure equipment has no obvious faults or defects 11.6 Use the correct procedure to call for any equipment maintenance if needed			
12 Keep appropriate records	12.1 Ensure the process documentation is kept up to date, is accurate, complete and stored appropriately			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 31: Establish the Conditions for a Process Operation

Unit reference number: F/502/8187

QCF level: 3

Credit value: 5

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in establishing the conditions for a process operation within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to determine the best equipment and systems configurations	1.1 Explain what the main functions are of process equipment and systems 1.2 Explain how the various parts of a system interact 1.3 Explain what types of services are used by process equipment and systems 1.4 Explain what differences there are between control of standard and complex processes 1.5 Describe how the various facets of a complex process interact 1.6 Explain which parameters are more critical than others and which can be allowed to fluctuate within a tolerance band			
2 Know how to set up conditions for complex operations	2.1 Explain why a specification is needed for the process 2.2 Describe the materials required and what happens to them during the process 2.3 Explain where to get the product specification and what information is normally given on this 2.4 Describe how to read and interpret a process specification			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to run complex operations and respond to problems	3.1	Explain how to recognise possible faults and defects in equipment and systems			
		3.2	Explain the procedures to be followed for removing and replacing system components under operator control and altering system settings			
		3.3	Describe how to make sure that replacement components are secure and set correctly			
		3.4	Explain what tests are run after system changes have been made and why it is important to follow the test procedures exactly			
		3.5	Explain how to maintain control when adjusting system settings to avoid over and under compensations and swings			
4	Know how to maintain accurate records and communicate effectively with others	4.1	Explain what sort of records are kept and how to complete them			
		4.2	Explain how to read and analyse relevant data in tables, printouts and schematics			
		4.3	Describe what conventions are used in the process			
		4.4	Describe which units of measurement are used and what they mean			
		4.5	Describe the importance of communicating effectively with others and why it is important for team members to support each other effectively			
		4.6	Explain what type of information is needed by individuals involved in the process			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Know the safety standards appropriate for the operation	5.1	Explain the safety standards that apply to the process environment			
		5.2	Explain the risks that are present in a process environment			
		5.3	Explain what risk control measures are in place and why it is important to comply with them			
6	Interpret specifications to determine the best equipment and system configurations	6.1	Obtain current, clear and complete details of the product specification to be met, production requirements and material characteristics relevant to the operation			
		6.2	Accurately assess the implications for equipment and system configuration arising from the product quality specification to be met, the production requirements sought and the characteristics of the materials to be used			
		6.3	Determine accurately which equipment will be needed to achieve the specification			
		6.4	Confirm the equipment and system configurations meet the specification			
		6.5	Check and confirm the services needed are operational and available			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
7	Set up the conditions for complex operations	7.1	Determine the configuration and settings most appropriate for safe and efficient achievement of process operation			
		7.2	Check equipment is free from obvious faults and defects			
		7.3	Check and confirm the availability of necessary materials			
8	Run complex operations	8.1	Conduct any pre-production trials safely and accurately			
		8.2	Assess accurately the implications of initial outcomes, making adjustments as necessary to ensure the process is under control			
		8.3	Take prompt and effective action to respond to any problems			
		8.4	Follow the safety, health and environmental procedures relevant to the operation			
9	Maintain accurate records and communicate effectively with others	9.1	Produce accurate and clear records of the configurations needed to achieve the specification			
		9.2	Make accurate records of initial product and production outcomes			
		9.3	Inform everyone clearly who will be involved in the operation			
		9.4	Communicate the equipment and system configurations to be set up clearly to those involved			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 32: Optimise Standard Operations Which are Under Process Control

Unit reference number: J/502/8188

QCF level: 3

Credit value: 5

Guided learning hours: 28

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in optimising standard operations which are under process control within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to set up the conditions required for standard process operations to proceed	1.1 Explain why a specification for a process is required and what information specifications normally give 1.2 Explain how to read and interpret a product specification 1.3 Describe where to find a product specification 1.4 Detail what start-up checks should be made to ensure equipment and system is fit for use and has no faults or defects 1.5 Describe how equipment is set up to ensure it meets specification 1.6 Describe the safety standards which need to be followed in the process			
2 Know how to initiate and optimise operations	2.1 Explain what routine checks and inspections are carried out 2.2 Describe which equipment and systems maintenance needs specialist attention 2.3 Explain the main functions of process equipment and systems 2.4 Describe what materials are used in different processes 2.5 Explain why processed, part-processed and excess materials plus by-products should be separated out as they are produced			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to respond to hazards and problems	3.1	Explain what types of hazards and problems can arise from processing operations			
		3.2	Describe how to recognise possible spillages, leaks and emissions from appearance and smell			
		3.3	Explain what symptoms indicate a problem that needs maintenance attention			
		3.4	Describe what hazards to people and the environment arise from mishandling and misprocessing materials			
		3.5	Explain the precautions and procedures that should be used when handling materials at all stages of the process and in storage			
4	Know how to bring the operation to a conclusion	4.1	Explain the procedures to follow to shut down a process and why it is important to follow these procedures			
		4.2	Explain which parts of the system and its services may need to be isolated			
		4.3	Explain why equipment and system may need to be dismantled and cleaned if they are to be used for different product or specification subsequently			
5	Know what records are kept	5.1	Explain what information to gather and when			
		5.2	Detail what environmental records are kept			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
6	Know how to use available data	6.1	Explain how to compare available data			
		6.2	Describe what level of monitoring is required at each stage of the process			
		6.3	Explain how to read and analyse relevant data in tables, printouts and schematics			
		6.4	Explain what units of measurement are used and what they mean			
7	Set up the conditions required for standard process operations to proceed	7.1	Obtain access to accurate and complete details on the specification to be achieved			
		7.2	Check that everyone who will be involved in the operation is ready and knows what to do			
		7.3	Check and confirm that any services needed are operational			
		7.4	Check and confirm that materials of the specified quality and amount are available			
		7.5	Confirm that equipment controls are to the settings needed for the operation to run to specification			
		7.6	Check that the equipment has no obvious visual defects and take prompt and effective action to deal with any problems with the equipment, services and materials			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
8 Initiate and optimise the operation	8.1 Interpret data correctly to judge if the process and product are in specification and the operation is running optimally 8.2 Identify promptly when a process is out of specification and take appropriate action 8.3 Respond promptly to variances, taking whatever action is needed to maximise the use of resources, optimise the process and keep the product within specification 8.4 Check that the process control system is operating properly and, if it isn't, make suitable adjustments to make sure that specifications are met 8.5 Segregate out any products which do not meet the specification 8.6 Give clear instructions and information to others on what they need to do to optimise the operation 8.7 Maintain production schedules			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
9	Conclude the process operation, leaving equipment in a suitable state for subsequent use	9.1	Confirm with others that all aspects of the operation have been concluded			
		9.2	Shut down and isolate equipment under own control in the sequence and timings needed to maintain the safety of the entire system			
		9.3	Clear and clean equipment where this is needed before it can be used again and remove residual and waste materials into suitable storage, handling them safely to avoid loss and contamination			
		9.4	Check visually whether the equipment and system have any faults and defects, ensuring the correct procedure to call for any maintenance needed is followed			
		9.5	Follow the safety, health and environmental procedures for shut down of the operation			
10	Maintain required records	10.1	Keep operational data up to date, accurate and complete			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 33: Carry Out Scientific or Technical Testing Operations

Unit reference number: K/601/9719

QCF level: 3

Credit value: 12

Guided learning hours: 57

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out scientific or technical testing operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ) in the QCF' which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Laboratory and Associated Technical Activities Level 3 unit assessment strategy which can be downloaded from Semta's website:
http://www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Carry out scientific or technical testing operations	1.1 Ensure that their work is carried out in accordance with workplace procedures 1.2 Use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities 1.3 Identify conditions for scientific or technical tests to be done 1.4 Identify conditions for scientific or technical tests that include two of the following: – test environment – test criteria – safety factors – time recording system – cleanliness – external influence that can variations 1.5 Establish the requirements for the scientific or technical tests to be done			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Establish requirements for one of the following types of test: – plastics/polymers – metal/metallurgy – material/physical properties – petroleum/petrochemical – chemicals/pharmaceuticals – mechanical properties – product/process quality – omissions/leaks/contamination – other (please specify) 1.7 Select the appropriate testing methods from procedures for the testing requirements 1.8 Prepare the resources needed for the testing operations			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Carry out scientific or technical testing operations (continued)	2.1 Prepare all of the following resources for testing operations: – consumables – test materials – utilities/facilities – equipment – instruments 2.2 Prepare the test samples in accordance with the procedures and check their integrity 2.3 Carry out the required tests in accordance with the procedures 2.4 Carry out two of the following pre-test check on equipment and test instruments: – calibration – serviceability – cleanliness – set-up conditions 2.5 Carry out integrity checks that include three of the following: – free from subsequent defects – damage and decomposition – homogeneity			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Communicate the required information about the work done, in accordance with departmental and organisational procedures 2.7 Record and communicate details of work done, to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific workplace documentation – computer-based record – electronic mail			
3 Know how to carry out scientific or technical testing operations	3.1 Describe the health and safety requirements of the area in which they are carrying out the scientific or technical activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities 3.3 Describe the scientific or technical techniques and processes they must use correctly in the workplace 3.4 Explain the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities 3.5 Explain importance of correct identification, and any unique workplace coding system			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the organisational requirements for maintaining the security of the workplace (eg access or aseptic conditions) 3.7 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.8 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.9 Explain why it is important to follow safe operating procedures when using equipment and/or materials 3.10 Describe the principles and procedures for testing 3.11 Describe the purposes of testing and the specific use to which the test results are to be put 3.12 Describe the relevant testing methods that can be used to achieve the purpose of testing 3.13 Explain why calibration is important and how to check calibration			
4 Know how to carry out scientific or technical testing operations (continued)	4.1 Explain how to check the sample identity and its integrity 4.2 Describe the range of methods used to prepare samples 4.3 Explain how to identify defective equipment and the appropriate action to take			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.4 Describe the methods that can be used for controlling test variables 4.5 Describe the concepts of repeatability and reproducibility 4.6 Describe the range of equipment available for testing and how to choose the most appropriate equipment 4.7 Describe the potential impact of the test on health, safety and the environment 4.8 Describe the methods that can be used for dealing with the handling, storage and disposal of materials 4.9 Describe the cleaning materials and the methods for their use 4.10 Describe the methods of safe storage that can be used 4.11 Describe the document control and reporting procedures that should be used 4.12 Explain the reasons why effective communication is important, and the methods used for communicating effectively			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 34: Plan Process Activities

Unit reference number: R/502/8131

QCF level: 3

Credit value: 5

Guided learning hours: 28

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in planning process activities within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to identify health and safety issues and safe procedures	1.1	Describe the health and safety legislation, regulations and safe working practices and procedures to use			
		1.2	Explain the specific safe working practices or regulations which apply to the tasks necessary to meet the plan			
		1.3	Describe the risk assessments necessary for the operation of the plan			
2	Know how to collect the information needed to prepare the plan and identify the operations	2.1	Describe the sources of information needed to prepare the plan			
		2.2	Explain the operations to be carried out			
		2.3	Describe the sequence of tasks to carry out the plan			
		2.4	Describe the working methods to use			
		2.5	Explain the resources required and from where to get them			
		2.6	Describe any special requirements and how to incorporate these into the plan			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to develop and communicate plans	3.1	Explain the timescales for the plan, including making allowances for delays			
		3.2	Describe the format of presentation for the plan			
		3.3	Describe how to formally record the plan			
		3.4	Identify who to inform when the plans are complete			
		3.5	Explain how to communicate plans to those responsible for their implementation			
4	Know how to respond effectively to problems	4.1	Describe own level of authority to respond to problems which affect planning activities, or may affect the implementation of the plans			
		4.2	Describe the person to whom issues should be reported, when they cannot be resolved, and the procedure for doing so			
5	Identify health and safety issues and safe procedures	5.1	Identify health and safety issues and safe procedures which must be followed			
6	Plan and identify the operations to be carried out	6.1	Collect the information needed to prepare the plan			
		6.2	Identify the operations to be carried out and determine their sequence			
		6.3	Establish which methods are required and what resources are to be used			
		6.4	Estimate timescales required			
		6.5	Prepare and record the plan			
		6.6	Inform the appropriate people when the plan is completed			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
7 Respond effectively to problems	7.1 Respond effectively to problems within own control and report those that cannot be solved			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 35: Test and Maintain the Performance of a Computer Controlled Process Operation

Unit reference number: Y/502/8132

QCF level: 3

Credit value: 4

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in testing and maintaining the performance of a computer controlled process operation within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1 Describe the health and safety legislation, regulations and safe working practices and procedures 1.2 Describe the effect of statutory and company safety, health and environmental regulations on own job 1.3 Explain the specific safety features incorporated into the processes under own control, including the control system, controlled machinery and the building 1.4 Describe the procedures to follow in the event of emergencies or process deviations which may lead to hazardous occurrences 1.5 Explain the responsibilities for personal safety and that of colleagues 1.6 Describe the statutory risk assessments carried out for own controlled processes and how often they are revised			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Know how to run operating programme	2.1 Explain the operating systems/commercial control systems incorporated into the process 2.2 Explain the major features within the technical specification of the process control plant 2.3 Describe the equipment linked to the control system and the type of communications bus/protocol through which this is linked 2.4 Explain how to load programmes into the process control system correctly 2.5 Describe the types of programme storage media and backup systems in place			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to adjust equipment and carry out functional checks	3.1 Explain how to test and commission a new programme 3.2 Describe the most common adjustments required to ensure the process is operating within agreed tolerances to achieve optimum performance 3.3 Explain the limits of own authority with respect to control systems or equipment adjustments 3.4 Explain the routine maintenance procedures for controls and controlled process equipment 3.5 Describe the system's most vulnerable components which may need frequent repair or replacement 3.6 Describe the checks to carry out to ensure that process safety mechanisms are in place and fully operational 3.7 Explain the final checks to ensure that a process is correctly set up 3.8 Describe ways of ensuring that a process is fully functional once the operating programme is set up			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to respond to problems effectively	4.1	Describe the common error messages which occur during loading and initiation and how to respond to them			
		4.2	Explain ways of recognising and dealing with a corrupted programme file			
		4.3	Explain how to respond to problems within own control			
		4.4	Describe the person to report to when there are problems which cannot be resolved			
5	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	5.1	Work safely at all times, complying with health and safety and other relevant regulations and guidelines			
		5.2	Check that all safety mechanisms are in place and the equipment is set correctly for the required operations			
6	Run operating programme	6.1	Obtain the correct operating programme and check the machine			
		6.2	Follow the correct procedures for calling up the programme and responding to any error messages or faults			
7	Adjust equipment and carry out functional checks	7.1	Carry out functional checks in accordance with operating requirements			
		7.2	Adjust the equipment and programme operating parameters to optimise the outcomes to be achieved			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
8 Respond effectively to problems	8.1 Respond promptly and effectively to problems within own control and report those which cannot be solved			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 36: Diagnose Faults in Process Equipment

Unit reference number: D/502/8133

QCF level: 3

Credit value: 4

Guided learning hours: 24

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in diagnosing faults in process equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to work safely at all times, complying with health and safety and other relevant regulations and guidelines	1.1	Describe the health and safety legislation, regulations and safe working practices and procedures			
		1.2	Explain the procedures to follow in the event of emergencies or hazardous occurrences			
		1.3	Explain the responsibilities for personal safety and that of colleagues			
2	Know how to use information on the symptoms and problems	2.1	Describe the possible characteristics and causes of specific faults			
		2.2	Explain the information needed to get a clear description of a fault			
		2.3	Explain how to analyse information on faults to determine probable causes			
3	Know how to use diagnostic techniques, tools and aids to locate faults	3.1	Describe fault finding diagnostic aids			
		3.2	Describe fault finding methods and techniques			
		3.3	Describe the basic care and maintenance requirements of the test equipment			
		3.4	Explain how to identify the extent and location of faults and what to do when causes are difficult to discern			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to draw conclusions about the nature and probable cause of faults	4.1	Explain how to use information to draw valid conclusions about the nature and probable cause of faults			
		4.2	Describe the actions which can be taken to deal with a fault			
		4.3	Explain how to assess the risks which may arise from faults			
5	Know how to record and report details of the faults	5.1	Explain who to report faults and diagnoses to			
		5.2	Describe the documentation to complete to report on faults and their diagnosis			
6	Work safely at all times, complying with health and safety and other relevant regulations and guidelines	6.1	Work safely at all times, complying with health and safety and other relevant regulations and guidelines			
7	Use information on the symptoms and problems	7.1	Review and use all relevant information on the symptoms and problems associated with the products or assets			
		7.2	Investigate and establish the most likely causes of the faults			
8	Use diagnostic techniques, tools and aids to locate faults	8.1	Select, use and apply diagnostic techniques, tools and aids to locate faults			
		8.2	Complete the fault diagnosis within the agreed time and inform the appropriate people when this cannot be achieved			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
9	Draw conclusions about the nature and probable cause of faults	9.1	Use the evidence gained to draw valid conclusions about the nature and probable cause of the fault			
		9.2	Determine the implications of the fault for other work and for safety considerations			
10	Record details of the faults	10.1	Record details on the extent and location of the faults in an appropriate format			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 37: Provide Operational Support to Users of Process Equipment

Unit reference number: H/502/8134

QCF level: 3

Credit value: 6

Guided learning hours: 36

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in providing operational support to users of process equipment within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to work safely in accordance with the regulations for the work environment	1.1	Explain the health and safety legislation, regulations and safe working practices and procedures			
		1.2	Describe the procedures to follow in the event of emergencies or hazardous occurrences			
		1.3	Explain the responsibilities for personal safety and that of colleagues			
2	Know how to provide operational support	2.1	Describe the process equipment involved and their functions			
		2.2	Describe the main components and materials used in the process			
		2.3	Explain who is authorised to use the equipment			
		2.4	Describe the support which may be required by those using the equipment			
		2.5	Describe how to provide operational support within agreed timescales			
		2.6	Describe the information and documentation systems used and how to operate them			
		2.7	Explain how to determine the action needed to respond to problems			
3	Know how to seek feedback on the support provided	3.1	Explain how to obtain feedback from those support has been provided for and why this is important			
		3.2	Describe how to use information gained through feedback to best advantage			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Know how to maintain records	4.1	Describe how to maintain records in accordance with organisational requirements			
5	Work safely in accordance with the regulations for the work environment	5.1	Work safely in accordance with the regulations for the work environment			
6	Provide operational support	6.1	Provide operational support within agreed timescales and working arrangements			
		6.2	Make sure that operational support is appropriate and based on accurate and current information			
7	Seek feedback on the support provided	7.1	Obtain feedback on the support provided			
		7.2	Respond promptly and effectively to problems relating to the provision of operational support			
8	Maintain records	8.1	Produce and maintain records in accordance with organisational requirements			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 38: Plan, Allocate and Monitor Work of a Team

Unit reference number: Y/600/9669

QCF level: 3

Credit value: 5

Guided learning hours: 25

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in planning, allocating and monitoring work of a team within the relevant sector of industry.

Assessment requirements/evidence requirements

Assessment must be carried out in a way that is consistent with the requirements outlined in *Annexe D*.

To pass the unit, learners must meet all of the assessment criteria.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Be able to plan work for a team	1.1	Agree team objectives with own manager			
		1.2	Develop a plan for a team to meet agreed objectives, taking into account capacity and capabilities of the team			
2	Be able to allocate work across a team	2.1	Discuss team plans with a team			
		2.2	Agree work allocation and SMART (Specific, Measurable, Achievable, Realistic and Time-bound) objectives with team members			
		2.3	Agree standard of work required by team			
3	Be able to manage team members to achieve team objectives	3.1	Support all team members in order to achieve team objectives			
4	Be able to monitor and evaluate the performance of team members	4.1	Assess team members' work against agreed standards and objectives			
		4.2	Identify and monitor conflict within a team			
		4.3	Identify causes for team members not meeting team objectives			
5	Be able to improve the performance of a team	5.1	Identify ways of improving team performance			
		5.2	Provide constructive feedback to team members to improve their performance			
		5.3	Implement identified ways of improving team performance			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 39: Prepare and Issue Written Procedures

Unit reference number: K/502/8135

QCF level: 2

Credit value: 3

Guided learning hours: 16

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in preparing and issuing written procedures within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know how to prepare and present draft procedures	1.1	Describe the sources of information to use			
		1.2	Explain how to determine what information to include in procedures			
		1.3	Describe the production objectives			
		1.4	Describe the major health, safety and environmental hazards			
		1.5	Describe the format in which to present draft procedures			
2	Know how to evaluate and amend draft procedures	2.1	Explain who can authorise tests of the procedures			
		2.2	Explain who needs to comment on the procedures			
		2.3	Describe how to arrange independent trials			
3	Know how to obtain approval for procedures	3.1	Explain who to obtain final approval from for written procedures			
		3.2	Explain which production or training schedules will be affected by new or revised procedures			
		3.3	Explain who to pass the procedures to for issue			
4	Prepare and present draft procedures	4.1	Identify sources of information and evaluate all relevant information			
		4.2	Draft procedures which meet production objectives and describe the major health, safety and environmental hazards			
		4.3	Present procedures which are clear, concise and in the specified format			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Evaluate and amend draft procedures	5.1 Obtain authority to test procedures 5.2 Arrange for independent trials on plant /equipment 5.3 Revise procedures as appropriate 5.4 Amend and retest the procedures as required			
6 Obtain approval for procedures	6.1 Obtain final approval from appropriate authorities 6.2 Ensure that new or revised procedures are ready when required by the production and training schedules 6.3 Distribute the documented procedures promptly to all relevant parties for issue			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 40: Set Objectives and Provide Support for Team Members

Unit reference number: M/600/9600

QCF level: 3

Credit value: 5

Guided learning hours: 35

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in setting objectives and providing support for team members within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Be able to communicate a team's purpose and objectives to the team members	1.1	Describe the purpose of a team			
		1.2	Set team objectives with its members which are SMART (Specific, Measurable, Achievable, Realistic and Time-bound)			
		1.3	Communicate the team's purpose and objectives to its members			
2	Be able to develop a plan with team members showing how team objectives will be met	2.1	Discuss with team members how team objectives will be met			
		2.2	Ensure team members participate in the planning process and think creatively			
		2.3	Develop plans to meet team objectives			
		2.4	Set SMART personal work objectives with team members			
3	Be able to support team members identifying opportunities and providing support	3.1	Identify opportunities and difficulties faced by team members			
		3.2	Discuss identified opportunities and difficulties with team members			
		3.3	Provide advice and support to team members to overcome identified difficulties and challenges			
		3.4	Provide advice and support to team members to make the most of identified opportunities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Be able to monitor and evaluate progress and recognise individual and team achievement	4.1 Monitor and evaluate individual and team activities and progress 4.2 Provide recognition when individual and team objectives have been achieved			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 41: Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments

Unit reference number: M/600/5224

QCF level: 3

Credit value: 5

Guided learning hours: 10

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in contributing to the maintenance of product quality within processing and manufacturing environments within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Assessment Strategy for the sector in which it is being assessed.

This unit should not be taken prior to taking 'How to Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments.'

The assumed prerequisite is that the learner taking this unit will be an experienced operator with relevant technical training.

Assessment Context

This unit addresses the competence required to contribute to the maintenance of product quality. This involves:

- identifying problems using guidance materials
- selecting and carrying out defined procedures to deal with a problem.

The following terms have a specific meaning in this unit:

Materials

May include solids, liquids and gases. Some may be hazardous.

Operating instructions/specification

The set of instructions which describe the work to be carried out, including customer requirements, both qualitative and quantitative, and the time within which it must be completed.

Sampling plan

Contains all relevant information. Could include:

- conditions
- sampling method
- access
- location
- timing
- frequency
- duration
- recording methods.

Testing request

Could include the following:

- conducting density/moisture tests
- establishing liquid and plastic limits
- performing viscosity tests
- cell identification/in-numeration.

Testing plan

Contains all relevant information to be used. Could include:

- calibration of equipment
- testing method
- cleanliness
- environment
- time
- acceptable variations
- recording methods.

Problems

These can relate to either materials, equipment, personnel, and/or delivery specifications. The person carrying out this work would be expected to resolve any equipment problem for which maintenance engineers are not required. Where a problem does require a maintenance engineer, the person would be expected to report the problem to a more senior person. Other problems include contamination, disruption and disturbance.

Documentation

Includes specifications, reports, schedules and any other relevant documentation.

Conditions

Control of conditions may include, but are not limited to:

- temperature
- flow

- humidity
- pressure
- density
- pH
- level.

Risk assessment

To include hazardous materials and contamination, when appropriate.

Quality checks

Quality checks can be carried out on both materials and products.

Communication/communicate

May include spoken, written and/or electronic.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Be able to carry out quality checks	1.1	Accurately identify quality requirements from operating/sampling instructions			
		1.2	Make the quality checks in accordance with operating/sampling instructions			
		1.3	Segregate non-complying items according to the operating/sampling instruction			
		1.4	Label and record appropriately			
2	Be able to deal with quality problems according to procedures	2.1	Promptly and correctly identify quality problems			
		2.2	Accurately record the details of the problem in the correct records			
		2.3	Deal effectively with problems			
		2.4	Report any problems that cannot be solved and/or are outside the area of responsibility			
3	Be able to follow organisational procedures when contributing to the maintenance of product quality	3.1	Communicate effectively at all times			
		3.2	Wear PPE when appropriate			
		3.3	Document all information accurately			
		3.4	Work safely at all times, following all safety, health and environment (SHE) requirements relevant to the process			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 42: How to Contribute to the Maintenance of Product Quality Within Processing and Manufacturing Environments

Unit reference number: T/600/5225

QCF level: 4

Credit value: 5

Guided learning hours: 42

Unit summary

The aim of this unit is to illustrate the knowledge in how to contribute to the maintenance of product quality within processing and manufacturing environments within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Assessment Strategy for the sector in which it is being assessed.

The assumed prerequisite is that the learner taking this unit will be an experienced operator with relevant technical training.

Assessment Context

This unit addresses the knowledge required to contribute to the maintenance of product quality. This involves:

- identifying problems using guidance materials
- selecting and carrying out defined procedures to deal with a problem.

The following terms have a specific meaning in this unit:

Materials

May include solids, liquids and gases. Some may be hazardous.

Operating instructions/specification

The set of instructions which describe the work to be carried out, including customer requirements, both qualitative and quantitative, and the time within which it must be completed.

Sampling plan

Contains all relevant information. Could include:

- conditions
- sampling method
- access
- location
- timing
- frequency
- duration
- recording methods.

Testing request

Could include the following:

- conducting density/moisture tests
- establishing liquid and plastic limits
- performing viscosity tests
- cell identification/in-numeration.

Testing plan

Contains all relevant information to be used. Could include:

- calibration of equipment
- testing method
- cleanliness
- environment
- time
- acceptable variations
- recording methods.

Problems

These can relate to either materials, equipment, personnel, and/or delivery specifications. The person carrying out this work would be expected to resolve any equipment problem for which maintenance engineers are not required. Where a problem does require a maintenance engineer, the person would be expected to report the problem to a more senior person. Other problems include contamination, disruption and disturbance.

Documentation

Includes specifications, reports, schedules and any other relevant documentation.

Conditions

Control of conditions may include, but are not limited to:

- temperature
- flow
- humidity
- pressure
- density
- pH
- level.

Risk assessment

To include hazardous materials and contamination, when appropriate.

Health, safety and environmental legislation

To include all relevant legislation and company policy.

Quality checks

Quality checks can be carried out on both materials and products.

Communication/communicate

May include spoken, written and/or electronic.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Know the types and uses of materials used in different processes	1.1	Explain what materials are used in different processes			
		1.2	Describe what happens to the materials as they are processed			
		1.3	Explain why the materials have to be prepared			
2	Know the processes in place to control quality	2.1	Summarise what quality control measurements are taken with regard to product quality			
		2.2	Explain at what stages product quality is checked			
		2.3	Explain the quality control systems in their workplace			
3	Know how to deal with quality problems according to procedures	3.1	Explain why it is logical to first investigate the most likely causes of a problem before looking any further			
		3.2	Explain why it is important to gather sufficient information about a problem before drawing conclusions			
		3.3	Explain how to deal with typical problems			
		3.4	Clarify who to report unsolvable problems to			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Know the organisational procedures to follow to contribute to the maintenance of product quality	4.1 Explain what working practices and authorisations apply, the lines of communication and procedures that should be followed in a given situation and why it is important to work within the 'rules' of the organisation 4.2 Summarise the sorts of records kept, how to complete them, where they are stored and who has access to them 4.3 Explain what the limits of personal responsibility are with regard to health and safety 4.4 Explain when and how to wear personal protective equipment			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 43: Support Team Members in Identifying, Developing and Implementing New Ideas

Unit reference number: L/600/9636

QCF level: 3

Credit value: 4

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in supporting team members in identifying, developing and implementing new ideas within the relevant sector of industry.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Be able to develop team ideas and develop the creativity of team members	1.1	Encourage team members to identify ideas			
		1.2	Record team members' ideas			
2	Be able to assess the viability of team members' ideas	2.1	Assess with team members the potential benefits and risks associated with an idea, and the resources required			
3	Be able to support team members to implement ideas	3.1	Explain how to support team members in submitting formal proposals for approval			
		3.2	Explain to team members how to identify and overcome barriers to implementing an idea			
4	Be able to implement team ideas	4.1	Monitor the implementation of ideas by own team			
		4.2	Communicate the progress of implementation to relevant others' own organisation			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 44: Reduce the Risks to Health, Safety and the Environment in the Workplace

Unit reference number: F/502/8139

QCF level: 3

Credit value: 4

Guided learning hours: 20

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in reducing the risks to health, safety and the environment in the workplace within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced operator in a processing or manufacturing environment.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know the standards and responsibilities for health, safety and the environment in the work area	1.1 Explain the legal duties for health and safety in the workplace for both employers and employees 1.2 Explain own responsibility for health and safety as defined by any specific legislation for the job role 1.3 Explain the safety standards associated with own working environment and the risks they pose 1.4 Detail who the person responsible for health and safety is and how to communicate with them 1.5 Explain what environmental monitoring records are kept			
2 Know how to ensure own safety within the work area	2.1 Explain where to obtain details about safety, health and environmental protection 2.2 Explain the importance of complying with the environmental policy and objectives 2.3 Explain risk assessment principles and procedures 2.4 Describe what personal protective equipment is appropriate for different tasks, how to use this equipment and how to maintain it			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Know how to deal with hazards	3.1	Explain what hazards to the environment can arise from processing operations and how to recognise them			
		3.2	Summarise how to deal with hazards safely			
		3.3	Explain how to recognise when a hazard is one that should be reported to the person responsible for health and safety			
4	Know how to suggest ways to reduce risks to health, safety and the environment	4.1	Explain how to identify and prioritise potential improvements to health, safety and environmental protection			
		4.2	Explain how to monitor and review health, safety and environmental practice, and why it is important to do so			
5	Know how to identify health and safety training needs and how to ensure these needs are delivered	5.1	Explain what health, safety and environmental training all team members should have			
		5.2	Explain how to access training in health, safety and environmental protection			
6	Identify hazards and evaluate the risks they pose to people and the environment	6.1	Identify working practices, equipment and aspects of the workplace which could present hazards to people or the environment			
		6.2	Evaluate which hazards pose significant risks to people or the environment			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
7	Ensure the safety of individuals within the work area	7.1	Ensure that team members work safely at all times, in accordance with operating procedures and instructions			
		7.2	Ensure that all people within the work area wear appropriate personal protective clothing			
8	Deal with hazards effectively	8.1	Deal with identified hazards, to reduce the risks they pose, in accordance with workplace policies and legal requirements			
		8.2	Report risks that cannot be dealt with, to the person responsible for health and safety			
9	Take an active role in suggesting ways to reduce risks to health, safety and environment	9.1	Make suggestions for reducing risks to the responsible person, prioritising improvements identified			
		9.2	Monitor the effectiveness of health, safety and environmental practice regularly			
		9.3	Review health, safety and environmental practice to identify improvements			
10	Ensure health and safety training is identified and delivered	10.1	Confirm that all those working in the work area have had the correct health and safety training			
		10.2	Ensure that any health and safety training required is implemented without delay			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 45: Monitor Procedures to Safely Control Work Operations

Unit reference number: T/502/8140

QCF level: 3

Credit value: 5

Guided learning hours: 28

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in monitoring procedures to safely control work operations within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced employee with responsibility for checking and co-coordinating healthy and safe work operations.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know health and safety responsibilities in the workplace	1.1 Explain the employers' and employees' main legal responsibilities for health and safety in the workplace 1.2 Describe own responsibilities for health and safety as defined by any specific legislation covering the job role 1.3 Describe the scope of own job, competency and capabilities 1.4 Describe the work areas and people within own scope of responsibility 1.5 Describe the specific health and safety arrangements covering own job role 1.6 Explain the health and safety instructions at the workplace 1.7 Describe how to keep health and safety records 1.8 Describe effective communication methods			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Know how to make sure risks are controlled safely and effectively	2.1 Explain the difference between a hazard and a risk 2.2 Describe the particular health and safety risks which may be present in own job role and the precautions to take 2.3 Explain why it is important to remain alert to the presence of hazards in the workplace 2.4 Explain why hazards and risks in the workplace should be dealt with or reported promptly 2.5 Describe effective methods of monitoring other people's activities and communicating results 2.6 Describe agreed intervals for monitoring health and safety compliance 2.7 Describe hazard notices and alerts relevant to own work 2.8 Identify reliable sources of health and safety information			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Ensure health and safety practices are being followed within work areas	3.1 Keep up to date with health and safety regulations and workplace instructions, making sure that information is from reliable sources 3.2 Conduct monitoring of workplaces at agreed intervals and in accordance with workplace instructions 3.3 Confirm that worker health and safety competence is up to date 3.4 Confirm that the health and safety training needs of other people have been identified and met 3.5 Effectively communicate workplace instructions to other people and obtain feedback from them 3.6 Respond promptly to any breaches of health and safety instructions in a way which meets workplace and legal requirements 3.7 Make recommendations for changes to workplace instructions to the responsible people 3.8 Maintain records relating to health and safety matters that comply with legal and workplace requirements and are accessible to those who are authorised to use them			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Make sure that risks are controlled safely and effectively	4.1 Keep accurate and legible records of workplace risks identified or reported to them 4.2 Report the existence of hazards in accordance with workplace health and safety instructions 4.3 Confirm that appropriate precautions to control these risks have been agreed with the people responsible for health and safety 4.4 Confirm that the precautions are in accordance with legal and workplace health and safety instructions 4.5 Check that other people are aware of the risks and know the actions to be taken to minimise them 4.6 Review the operational controls to make sure that workplace hazards are eliminated or controlled 4.7 Report promptly and accurately any conflicts which still exist between workplace and legal requirements to the people responsible for health and safety			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 46: Promote a Health and Safety Culture in the Workplace

Unit reference number: Y/502/8146

QCF level: 4

Credit value: 7

Guided learning hours: 48

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in promoting a health and safety culture in the workplace within the relevant sector of industry.

Assessment requirements/evidence requirements

This unit is subject to the requirements set out in the Proskills Assessment Strategy.

The assumed prerequisite is that the learner undertaking this unit will be an experienced employee with responsibility for promoting health and safety within the workplace.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Know how to develop plans to promote a health and safety culture in the workplace	1.1 Describe the employers' and employees' main legal responsibilities for health and safety in the workplace 1.2 Summarise own responsibilities for health and safety as defined by any specific legislation covering the job role 1.3 Explain how to interpret workplace health and safety data kept at the workplace on risk assessment, incidents and complaints as an indication of the level of understanding of health and safety within the workplace 1.4 Describe the organisation's structure and lines of communication 1.5 Describe workplace instructions for communicating and consulting with colleagues and others in the workplace 1.6 Summarise what hazards may exist in own workplace 1.7 Explain the particular health and safety risks which may be present in own job role 1.8 Explain the particular health and safety risks which may be present in other job roles 1.9 Describe how to develop plans to promote a health and safety culture in the workplace			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Know how to implement plans to promote a health and safety culture in the workplace	2.1 Summarise the importance of remaining alert to the presence of hazards in the whole workplace 2.2 Explain the importance of dealing with or promptly reporting risks 2.3 Describe the work areas and job roles when reviewing the current working practices 2.4 Summarise workplace requirements for conducting a review of current working practices 2.5 Describe own capabilities and the scope of their job role 2.6 Describe own work areas and people who work there 2.7 Summarise the information needs of those people in the workplace affected by the plans 2.8 Describe the available information sources on health and safety within the workplace 2.9 Explain the importance of keeping people regularly informed and discussing their involvement when implementing plans 2.10 Explain how to implement plans to promote a health and safety culture in the workplace			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Develop plans to promote a health and safety culture in the workplace	3.1 Accurately identify where improvements and changes may be necessary using current sources of information available in the workplace 3.2 Find out how information on health and safety instructions and regulations is currently communicated within the workplace 3.3 Find out the current level of understanding of and support for health and safety instructions and procedures by people in the workplace 3.4 Base improvement plans on findings 3.5 Concisely describe within plans those resources which are necessary to improve the current health and safety culture 3.6 Include suitable performance measures and review dates in plans			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Implement plans to promote a health and safety culture in the workplace	4.1 Present plans for promoting a health and safety culture to the appropriate people in a clear and effective manner 4.2 Identify those people in the workplace who will require information and advice about the plans to promote a health and safety culture in the workplace 4.3 Check that relevant information and advice is provided at an appropriate time, level and pace 4.4 Make sure any plans include promoting the advantages and legal necessities of following health and safety procedures 4.5 Provide practical opportunities for regular consultation on health and safety issues and ways of encouraging ideas on good practice 4.6 Regularly monitor the effectiveness of plans against agreed performance measures 4.7 Identify and review opportunities for further improvements to the health and safety culture in the workplace			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Further information

Our customer service numbers are:

BTEC and NVQ	0844 576 0026
GCSE	0844 576 0027
GCE	0844 576 0025
The Diploma	0844 576 0028
DiDA and other qualifications	0844 576 0031

Calls may be recorded for training purposes.

Useful publications

Related information and publications include:

- *Centre Handbook for Edexcel QCF NVQs and Competence-based Qualifications* published annually
- Functional Skills publications – specifications, tutor support materials and question papers
- *Regulatory Arrangements for the Qualification and Credit Framework* (published by Ofqual, August 2008)
- the current Edexcel publications catalogue and update catalogue.

Edexcel publications concerning the Quality Assurance System and the internal and standards verification of vocationally related programmes can be found on the Edexcel website.

NB: Some of our publications are priced. There is also a charge for postage and packing. Please check the cost when you order.

How to obtain National Occupational Standards

You can contact the Sector Skills Council (SSC) at:

Proskills UK
Centurion Court
85b Milton Park
Abingdon
Oxfordshire
OX14 4RY

Telephone: 01235 833 844
Email: info@proskills.co.uk
Website: www.proskills.co.uk

Professional development and training

Edexcel supports UK and international customers with training related to NVQ and BTEC qualifications. This support is available through a choice of training options offered in our published training directory or through customised training at your centre.

The support we offer focuses on a range of issues including:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing student-centred learning and teaching approaches
- building Functional Skills into your programme
- building effective and efficient quality assurance systems.

The national programme of training we offer can be viewed on our website (www.edexcel.com/training). You can request customised training through the website or by contacting one of our advisers in the Training from Edexcel team via Customer Services to discuss your training needs.

The training we provide:

- is active
- is designed to be supportive and thought provoking
- builds on best practice
- may be suitable for those seeking evidence for their continuing professional development.

Annexe A: Progression pathways

The Edexcel qualification framework for the engineering and processing sector

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
5			Edexcel BTEC Level 5 HND Diploma in Aeronautical Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Automotive Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Electrical and Electronic Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Electrical Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Electronic Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in General Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Manufacturing Engineering (QCF)		

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
5 *continued*			Edexcel BTEC Level 5 HND Diploma in Marine Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Mechanical Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Operations Engineering (QCF) Edexcel BTEC Level 5 HND Diploma in Vehicle Operations Management (QCF)		
4			Edexcel BTEC Level 4 HNC Diploma in Aeronautical Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Automotive Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Electrical Engineering (QCF)		Edexcel Level 4 NVQ Diploma in Engineering Leadership (QCF) Edexcel Level 4 NVQ Extended Diploma in Engineering Leadership (QCF)

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
4 ***continued***			Edexcel BTEC Level 4 HNC Diploma in Electronic Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in General Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Manufacturing Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Marine Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Mechanical Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Operations Engineering (QCF) Edexcel BTEC Level 4 HNC Diploma in Vehicle Operations Management (QCF)		

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
3		Edexcel Level 3 Diploma in Engineering	Edexcel BTEC Level 3 Certificate in Aviation Operations on the Ground (Knowledge) (QCF) Edexcel BTEC Level 3 Certificate in Engineering (QCF) Edexcel BTEC Level 3 Diploma in Aeronautical Engineering (QCF) Edexcel BTEC Level 3 Diploma in Electrical/Electronic Engineering (QCF) Edexcel BTEC Level 3 Diploma in Engineering (QCF) Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Aeronautics) (QCF) Edexcel BTEC Level 3 Diploma in Heavy Vehicle Maintenance and Repair Principles (QCF)	Edexcel BTEC Level 3 Award in Engineering (Specialist: Aeronautics) (QCF) Edexcel BTEC Level 3 Award in Engineering (Specialist: Applied Science) (QCF) Edexcel BTEC Level 3 Award in Engineering (Specialist: Electrical/Mechanical) (QCF) Edexcel BTEC Level 3 Award in Engineering (Specialist: Manufacturing Engineering) (QCF) Edexcel BTEC Level 3 Award in Engineering (Specialist: Operations and Maintenance) (QCF) Edexcel BTEC Level 3 Certificate in Engineering (Specialist: Aeronautics) (QCF)	Edexcel Level 3 NVQ Diploma in Aeronautical Engineering (QCF) Edexcel Level 3 NVQ Diploma in Automotive Engineering (QCF) Edexcel Level 3 NVQ Diploma in Electrical and Electronic Engineering (QCF) Edexcel Level 3 NVQ Diploma in Engineering Leadership (QCF) Edexcel Level 3 NVQ Diploma in Engineering Maintenance (QCF) Edexcel Level 3 NVQ Diploma in Engineering Technical Support (QCF) Edexcel Level 3 NVQ Diploma in Engineering Toolmaking (QCF) Edexcel Level 3 NVQ Diploma in Engineering Woodworking, Pattern and Model Making (QCF)

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
3 ***continued***			Edexcel BTEC Level 3 Diploma in Light Vehicle Maintenance and Repair Principles (QCF) Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF) Edexcel BTEC Level 3 Diploma in Mechanical Engineering (QCF) Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) Edexcel BTEC Level 3 Extended Diploma in Aeronautical Engineering (QCF) Edexcel BTEC Level 3 Extended Diploma in Aircraft Maintenance (QCF) Edexcel BTEC Level 3 Extended Diploma in Electrical/Electronic Engineering (QCF)	Edexcel BTEC Level 3 Certificate in Engineering (Specialist: Applied Science) (QCF) Edexcel BTEC Level 3 Certificate in Engineering (Specialist: Electrical/Mechanical) (QCF) Edexcel BTEC Level 3 Certificate in Engineering (Specialist: Manufacturing Engineering) (QCF) Edexcel BTEC Level 3 Certificate in Engineering (Specialist: Operations and Maintenance) (QCF) Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Applied Science) (QCF) Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Electrical/Mechanical) (QCF)	Edexcel Level 3 NVQ Diploma in Fabrication and Welding Engineering (QCF) Edexcel Level 3 NVQ Diploma in Installation and Commissioning (QCF) Edexcel Level 3 NVQ Diploma in Marine Engineering (QCF) Edexcel Level 3 NVQ Diploma in Materials Processing and Finishing (QCF) Edexcel Level 3 NVQ Diploma in Mechanical Manufacturing Engineering (QCF) Edexcel Level 3 NVQ Extended Diploma in Aeronautical Engineering (QCF) Edexcel Level 3 NVQ Extended Diploma in Automotive Engineering (QCF)

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
3 *continued*			Edexcel BTEC Level 3 Extended Diploma in Engineering (QCF) Edexcel BTEC Level 3 Extended Diploma in Manufacturing Engineering (QCF) Edexcel BTEC Level 3 Extended Diploma in Mechanical Engineering (QCF) Edexcel BTEC Level 3 Extended Diploma in Operations and Maintenance Engineering (QCF) Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF) Edexcel Level 3 BTEC National Award in Vehicle Technology Edexcel Level 3 BTEC National Certificate in Vehicle Technology	Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Manufacturing Engineering) (QCF) Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Operations and Maintenance) (QCF)	Edexcel Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering (QCF) Edexcel Level 3 NVQ Extended Diploma in Engineering Leadership (QCF) Edexcel Level 3 NVQ Extended Diploma in Engineering Maintenance (QCF) Edexcel Level 3 NVQ Extended Diploma in Engineering Technical Support (QCF) Edexcel Level 3 NVQ Extended Diploma in Engineering Toolmaking (QCF) Edexcel Level 3 NVQ Extended Diploma in Engineering Woodworking, Pattern and Model Making (QCF)

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
3 ***continued***			Edexcel Level 3 BTEC National Diploma in Vehicle Technology		Edexcel Level 3 NVQ Extended Diploma in Fabrication and Welding Engineering (QCF) Edexcel Level 3 NVQ Extended Diploma in Installation and Commissioning (QCF) Edexcel Level 3 NVQ Extended Diploma in Marine Engineering (QCF) Edexcel Level 3 NVQ Extended Diploma in Materials Processing and Finishing (QCF) **Edexcel Level 3 NVQ Diploma in Combined Working Practices (QCF)**

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
2	Edexcel GCSE Engineering Edexcel GCSE Manufacturing	Edexcel Level 2 Diploma in Engineering	Edexcel BTEC Level 2 Certificate in Aviation Operations on the Ground (Knowledge) (QCF) Edexcel BTEC Level 2 Certificate in Engineering (QCF) Edexcel BTEC Level 2 Certificate in Improving Performance for Manufacturing Engineering Operations (QCF) Edexcel BTEC Level 2 Diploma in Engineering (QCF) Edexcel BTEC Level 2 Diploma in Heavy Vehicle Maintenance and Repair Principles (QCF) Edexcel BTEC Level 2 Diploma in Light Vehicle Maintenance and Repair Principles (QCF) Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)	Edexcel BTEC Level 2 Award in Engineering (Specialist: Applied Science) (QCF) Edexcel BTEC Level 2 Award in Engineering (Specialist: Manufacturing Engineering) (QCF) Edexcel BTEC Level 2 Certificate in Engineering (Specialist: Applied Science) (QCF) Edexcel BTEC Level 2 Certificate in Engineering (Specialist: Manufacturing Engineering) (QCF) Edexcel BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering) (QCF) Edexcel BTEC Level 2 Extended Certificate in Engineering (Specialist: Applied Science) (QCF)	Edexcel Level 2 NVQ Diploma in Aeronautical Engineering (QCF) Edexcel Level 2 NVQ Diploma in Engineering Maintenance and Installation (QCF) Edexcel Level 2 NVQ Diploma in Engineering Technical Support (QCF) Edexcel Level 2 NVQ Diploma in Fabrication and Welding Engineering (QCF) Edexcel Level 2 NVQ Diploma in Marine Engineering (QCF) Edexcel Level 2 NVQ Diploma in Materials Processing and Finishing (QCF) Edexcel Level 2 NVQ Diploma in Mechanical Manufacturing Engineering (QCF)

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
2 *continued*	Edexcel GCSE Engineering Edexcel GCSE Manufacturing		Edexcel Level 2 BTEC First Certificate in Vehicle Technology Edexcel Level 2 BTEC First Diploma in Vehicle Technology		Edexcel Level 2 NVQ Diploma in Performing Engineering Operations (QCF) Edexcel Level 2 NVQ Diploma in Performing Manufacturing Operations (QCF) **Edexcel Level 2 NVQ Diploma in Combined Working Practices (QCF)**
1		Edexcel Level 1 Diploma in Engineering	Edexcel BTEC Level 1 Award in Engineering (QCF) Edexcel BTEC Level 1 Certificate in Engineering (QCF) Edexcel BTEC Level 1 Diploma in Engineering (QCF)		Edexcel Level 1 NVQ Certificate in Performing Engineering Operations (QCF) Edexcel Level 1 NVQ Diploma in Performing Manufacturing Operations (QCF)

Annexe B: Quality assurance

Key principles of quality assurance

- A centre delivering Edexcel qualifications must be an Edexcel-recognised centre and must have approval for qualifications that it is offering.
- The centre agrees, as part of gaining recognition, to abide by specific terms and conditions relating to the effective delivery and quality assurance of assessment. The centre must abide by these conditions throughout the period of delivery.
- Edexcel makes available to approved centres a range of materials and opportunities to exemplify the processes required for effective assessment and provide examples of effective standards. Approved centres must use the guidance on assessment to ensure that staff who are delivering Edexcel qualifications are applying consistent standards.
- An approved centre must follow agreed protocols for: standardisation of assessors; planning, monitoring and recording of assessment processes; internal verification and recording of internal verification processes and dealing with special circumstances, appeals and malpractice.

Quality assurance processes

The approach to quality assured assessment is made through a partnership between a recognised centre and Edexcel. Edexcel is committed to ensuring that it follows best practice and employs appropriate technology to support quality assurance processes where practicable. The specific arrangements for working with centres will vary. Edexcel seeks to ensure that the quality assurance processes it uses do not inflict undue bureaucratic processes on centres, and works to support them in providing robust quality assurance processes.

The learning outcomes and assessment criteria in each unit within this specification set out the standard to be achieved by each learner in order to gain each qualification. Edexcel operates a quality assurance process, designed to ensure that these standards are maintained by all assessors and verifiers.

For the purposes of quality assurance, all individual qualifications and units are considered as a whole. Centres offering these qualifications must be committed to ensuring the quality of the units and qualifications they offer, through effective standardisation of assessors and internal verification of assessor decisions. Centre quality assurance and assessment processes are monitored by Edexcel.

The Edexcel quality assurance processes will involve:

- gaining centre recognition and qualification approval if a centre is not currently approved to offer Edexcel qualifications
- annual visits to centres by Edexcel for quality review and development of overarching processes and quality standards. Quality review and development visits will be conducted by an Edexcel quality development reviewer
- annual visits by occupationally competent and qualified Edexcel Standards Verifiers for sampling of internal verification and assessor decisions for the occupational sector
- the provision of support, advice and guidance towards the achievement of National Occupational Standards.

Centres are required to declare their commitment to ensuring quality and appropriate opportunities for learners that lead to valid and accurate assessment outcomes. In addition, centres will commit to undertaking defined training and online standardisation activities.

Annexe C: Centre certification and registration

Edexcel Standards Verifiers will provide support, advice and guidance to centres to achieve Direct Claims Status (DCS). Edexcel will maintain the integrity of Edexcel QCF NVQs through ensuring that the awarding of these qualifications is secure. Where there are quality issues identified in the delivery of programmes, Edexcel will exercise the right to:

- direct centres to take action
- limit or suspend certification
- suspend registration.

The approach of Edexcel in such circumstances is to work with the centre to overcome the problems identified. If additional training is required, Edexcel will aim to secure the appropriate expertise to provide this.

What are the access arrangements and special considerations for the qualifications in this specification?

Centres are required to recruit learners to Edexcel qualifications with integrity.

Appropriate steps should be taken to assess each applicant's potential and a professional judgement should be made about their ability to successfully complete the programme of study and achieve the qualification. This assessment will need to take account of the support available to the learner within the centre during their programme of study and any specific support that might be necessary to allow the learner to access the assessment for the qualification. Centres should consult Edexcel's policy on learners with particular requirements.

Edexcel's policy on access arrangements and special considerations for Edexcel qualifications aims to enhance access to the qualifications for learners with disabilities and other difficulties (as defined by the Equality Act 2010 and the amendments to the Act) without compromising the assessment of skills, knowledge, understanding or competence. Please refer to *Access Arrangements and Special Considerations for BTEC and Edexcel NVQ Qualifications* for further details (www.edexcel.com).

Annexe D: Assessment requirements/Strategy

The Proskills Assessment Strategy

Introduction

This Assessment Strategy is designed to cover the following S/NVQs:

Coatings	**Appendix (If appropriate)**
Producing Surface Coatings	
Furniture, Furnishings and Interiors	
Soft Furnishings	
Glass	
Installing Domestic Fascia, Soffit and Bargeboards	
Fenestration Installation and Surveying	
Glass Processing	
Glass Manufacturing	
Production of Glass Supporting Fabrications	
Glass Related Operations	
Automotive Glazing	
Print	
Digital Print Production	
Machine Printing	
Master Printer	
Print Management and Administration	
Print Finishing	
Envelope Manufacture	
Hand Binding	
Carton Manufacturing	
Print Administration	
Paper	
Fibreboard Operations	
Extractive and Mineral Processing	
Blasting Operations	**1**
Bulk Explosive Truck Operations	**1**
Directional Drilling (Drilling)	**1**
Directional Drilling (Fluid Operations)	**1**
Directional Drilling (Guidance)	**1**

Drilling Operations (Extractives)	**1**
Drilling Operations (Land Drilling)	**1**
Drilling Operations (Land Drilling Support)	**1**
Directional Drilling (Rig Erection)	**1**
Health, Safety & Environmental Management in the Extractive & Minerals Processing Industries	**1**
Mining Operations	
Processing Operations for the Extractive & Minerals Processing Industries	**1**
Supervision of Underground Mining Operations	**2**
Surface Mineral Development (Technical Support)	**1**
Surface Mineral Development (Design Concept)	**1**
Surface Mineral Development (Design Development)	**1**
Surface Mineral Development (Design Implementation)	**1**
Weighbridge Operations	**1**
Building Products	
Precast Concrete	
Performing Building Products Operations	
Generic	
Combined Working Practices	

This Assessment Strategy is designed to **supplement** the guidance issued by the Regulatory Authorities, including the **SQA Awarding Body Criteria (2007)**, and guidance issued by Awarding Bodies. This document is designed to be a core set of assessment practices. There may be specific Appendixes that apply to certain of the above awards (see above).

Section 1: Simulation

- Simulation is generally not acceptable. The exceptions to this are:
  - Dealing with emergencies
  - Dealing with accidents
  - Certain pre-approved real time simulators
  - Limited other procedures that can not be practically performed in the workplace, and for which sufficient evidence can not be collected through other means.
- Any simulation must be approved in advance by the External Verifier, and clear reasons must be given for its intended use.
- If approval is given, all Awarding Body guidance and requirements must be observed.
- Simulation should not be the primary source of a candidate's claim to competence.

Section 2: Expertise of Witnesses, Assessors and Verifiers

Third party 'witnesses' must also be competent to make judgements about the activity(ies) for which they are providing the testimony. As the assessment decision lies with the Assessor, it is their responsibility to verify this and, where challenged, to justify their acceptance of third party 'witness testimony' to the Internal Verifier.

Assessors must:

- Be registered and recognised by an approved centre
- Be competent to make qualitative judgements about the units they are assessing. Illustrations of competence could include the assessor:
    - Having achieved the award themselves
    - Having substantial demonstrable experience in the job roles they are assessing
    - Being in a day-to-day line management or quality assurance role with responsibility for the job roles they are assessing
- Be in possession of or working towards the A1/A2 award or hold the D32/33 award, and supported by an appropriate Continuing Professional Development (CPD) record
- Carry out their duties in accordance with the current NOS for Assessment, and in line with current guidance on assessment practice issued by the regulatory authorities and the appropriate Awarding Body
- Maintain appropriate evidence of development activities to ensure their assessment skills and occupational understanding are current (CPD)
- Have a working knowledge of awards and a full understanding of that part of the award for which they have responsibility. The Awarding Body will confirm this through examination of relevant CVs supported by relevant references.
- Be approved by the Awarding Body who must maintain records demonstrating how they meet the assessment strategy. The appointment of Assessors may require the prior approval of the Awarding Body.
- Meet any additional requirements as specified in the award specific Appendix
- Meet any additional requirements as specified by the awarding body.

Internal Verifiers must:

- Be registered and recognised by an approved centre
- Be in possession of or working towards the V1 award or hold the D34 award, as recommended by SQA/QCA and supported by an appropriate CPD record
- Carry out their duties in accordance with the current NOS for Verification, and in line with current guidance on verification practice issued by the regulatory authorities and the appropriate Awarding Body
- Maintain appropriate evidence of development activities to ensure their verification skills and occupational understanding are current (CPD)

- Have expertise and knowledge of awards and a full understanding of that part of the award for which they have responsibility. The Awarding Body will confirm this through examination of relevant CVs supported by relevant references.
- Be approved by the Awarding Body who must maintain records demonstrating how they meet the assessment strategy. The appointment of Internal Verifiers may require the prior approval of the Awarding Body.
- Meet any additional requirements as specified in the award specific Appendix
- Meet any additional requirements as specified by the awarding body.

External Verifiers must:

- Be registered and recognised by an approved Awarding Body
- Be familiar with and/or experienced in the relevant sector and/or context to be able to verify that candidate evidence has met the National Occupational Standards and the requirements of the appropriate Awarding Body.
- Be in possession of or be working towards the V2 or hold the D35 External Verifier Award.
- Carry out their duties in accordance with the current National Occupational Standards for Assessment and Verification and current guidance on best verification practice issued by the regulatory authorities and appropriate Awarding Body.
- Maintain appropriate evidence of development activities to ensure their verification skills and occupational awareness are current (CPD)
- Meet any additional requirements as specified in the award specific Appendix.
- Not work with any centre in which they have a personal or financial interest
- Meet any additional requirements as specified by the awarding body.

Section 3: Evidence and Location of Assessment

Evidence

The majority of the Candidate's evidence should come from direct observations of competence in the real workplace, unless specified in the award specific Appendix. Other types of acceptable evidence include, but are not limited to:

- Witness Testimony (Details of acceptable witnesses are found in "Section 2: Expertise of Verifiers, Witnesses and Assessors")
- Logs/Diaries kept by Candidates
- Recorded answers to questions posed by the Assessor
- Recorded/Transcribed Interviews with the Candidate
- Recorded use of up-to-date commercial/industrial equipment
- e-portfolios and other forms of digital media
- Works documentation attributable to the candidate
- Both interim and final internal verification.

Location of Assessment

Although the majority of the Candidate's evidence should come from direct observations of competence in the real work place, in exceptional circumstances simulation of the real workplace may be allowed. Occasions in which this may be approved are listed under "Section1: Simulation".

Section 4: Enhanced Quality Control

The External Quality Control will be through enhanced external verification and enhanced internal verification the latter moderated or monitored by the External Verifier.

Enhanced Internal Verification Strategy

All Internal Verifiers must provide evidence of having verified:

- Evidence supporting any key units (where specified in the award specific guidance) and evidence supporting at least one other unit from the award

OR

- The evidence supporting at least two distinct units (or as documented in the Award Specific Guidance) for each award per annum.

As well as:

- All evidence from all simulations/simulators
- Over time, an example of each unit the Assessor is qualified to assess
- Over time, an example of each assessment method used in the centre
- Evidence of internal verification

Enhanced External Verification Strategy

External Verifiers must carry out regular risk assessments and subsequent statistical analysis for each of the centres for which they have verification responsibilities. Where problems are identified through this procedure, the External Verifier will take further measures to ensure that the centre is performing to an acceptable level.

This could include, but should not be limited to:

- Verifying a representative sample of candidates' work from each Assessor, covering all Assessors in the centre over an agreed period of time, including:
    - Evidence supporting any key units from the award (where specified in the award specific guidance)
    - Selected evidence supporting distinct units identified by the External Verifier in response to issues raised through risk assessment
    - All evidence from all simulations
- Verifying selected evidence of Internal Verification procedures identified by the External Verifier in response to issues raised through risk assessment
- Externally-set banks of questions and answers that will test the presence of "essential" knowledge and understanding for selected Candidates.

Appendix 1 – EXTRACTIVE & MINERAL PROCESSING INDUSTRIES - Guidance for Awarding Bodies

Award	Performance Evidence	Simulation	Assessor/IV Requirements
	Performance Evidence will normally be drawn from activities carried out regularly over a period of no less than:	**Simulation** is discouraged for all parts of the award, however, it is permissible for the following:	**Assessor occupational competence** must relate to:
Blasting Operations Level 3	12 weeks		Blasting operations in the occupational context/s in which they assess **(e.g. quarries, mines, tunnels)**
Bulk Explosive Truck Operations Level 3			
Drilling Operations (Extractives) Level 2	12 weeks		Extractives drilling
Drilling Operations (Land Drilling) Level 2	12 weeks		Land drilling
Drilling Operations (Land Drilling Support) Level 2	12 weeks		Land drilling
Directional Drilling (Drilling) Level 2	12 weeks		Directional drilling
Directional Drilling (Fluid Operations) Level 2	12 weeks		Directional drilling (fluid operations)
Directional Drilling (Rig Erection) Level 2	12 weeks		Directional drilling (rig erection)
Directional Drilling (Guidance) Level 2	12 weeks		Directional drilling (guidance)

Award	Performance Evidence	Simulation	Assessor/IV Requirements
Processing Operations for the Extractive and Minerals Processing Industries Level 1, 2 & 3	10 weeks	**P2** - Safe use of fire extinguishers; organisational procedures in case of accident and/or fire	Assessors will be restricted to assessing those occupational groups in which they can demonstrate occupational competence i.e. (a) Crushing/Screening/Washing; (b) Drying; (c) Concrete & Mortar Production; (d) Asphalt/Coated Materials Production; (e) Density/Fluid Separation; (f) Chemical Separation; (g) Forming; (h) Heat Treatment; (i) Packaging; (j) Sawing, Splitting, Shaping (k) water monitoring; (l) china clay processing
Health, Safety & Environmental Management in the Extractive & Minerals Processing Industries Level 3	13 weeks	Performance criteria: **5.2f, 5.3.c, 5.3.d, 5.3.e, 5.3.f.**	**Assessors** must have sufficient competence in health, safety and environmental management, at or above the level they propose to assess, and an understanding of its applications in the extractives sector. **Internal Verifiers** must have sufficient technical understanding of health, safety and environmental management, its application and scope covered by the qualification.
Health, Safety & Environmental Management in the Extractive & Minerals Processing Industries Level 4	26 weeks		
Health, Safety & Environmental Management in the Extractive & Minerals Processing Industries Level 5	26 weeks	Performance Criteria **9.1.h.**	

Award	Performance Evidence	Simulation	Assessor/IV Requirements
Surface Mineral Development – Technical Support Level 3	10 weeks	**Unit DA04**, where it may be permitted to demonstrate competence to use fire extinguishers and for emergency procedures	
Surface Mineral Development – Design Concept Level 4			
Surface Mineral Development – Design Development Level 4			
Surface Mineral Development – Design Implementation Level 4			
Weighbridge Operations at Level 2	10 weeks	**WB1** - Safe use of fire extinguishers; organisational procedures in case of accident and/or fire **WB3** – Performance criteria **1.5, 1.6, 1.7.**	

Appendix 2 – Guidance for Awarding Bodies

Supervision of Underground Mining Operations

	Types of mines covered by the National Occupational Standards These National Occupational Standards apply to all mines (a mine being an underground void accessed by tunnels and/or shafts) in the United Kingdom. They apply whether the mine is extracting rock or mineral, used for storage, for tourism or for a combination of these purposes. These have been categorised into 8 groups [see below]. Awarding Bodies are recommended to endorse candidates' certificates with the appropriate category below from which the majority candidate's evidence has been drawn. For the purpose of these National Occupational Standards, the groups are defined as follows:	
1	**Coal Mine**	An underground area for the extraction of coal (by any mining method)
2	**Stone Mine**	An underground area for the extraction of dimension stone or slate
3	**Mineral Mine**	An underground area for the extraction of mineral deposits or veins (metallic or non-metallic)
4	**General Storage Mine**	An underground area used for the storage of materials other than waste or petrochemicals (eg documents, wine)
5	**Waste Storage Mine**	An underground area used for the storage of designated waste (eg special wastes, hospital waste, nuclear waste, domestic waste)
6	**Petrochemical storage mine**	An underground area used for the storage of petrochemicals (liquid or gas)
7	**Tourism Mine (Coal)**	A mine relating to coal mining now used as a tourist attraction
8	**Tourism Mine (non-coal)**	A mine relating to the mining of rocks and/or minerals other than coal now used as a tourist attraction

Annexe E: Additional requirement for qualifications that use the term 'NVQ' in a QCF qualification title

For information please go to www.ofqual.gov.uk to access the document *'Operating rules for using the term 'NVQ' in a QCF qualification title'*.

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