ETCAL Level 2 NVQ Certificate in Laboratory and Associated Technical Activities
601/6957/6
Assessment

Certificate - Assessment Principles

Introduction

ETA qualifications are developed in conjunction with the industries and employers they service. They are designed to add value and deliver multidimensional outputs that provide impact for both learners and employers.

It is therefore important that the assessment requirements of ETA qualifications are robust whilst not containing unnecessary and over-burdensome challenges that detract from the intended outcomes and impact. These assessment principles are prepared with that in mind and are applicable to this qualification:

Level 2 NVQ Certificate in Laboratory and Associated Technical Activities

Principles

There are four key principles to underpin assessment delivery:

1. Assessment should contribute to developing a learner's knowledge and/or skills and provide relevant and current development as the related industry requires.

2. Systems for capturing evidence of competence should be integrated and efficient. Assessment practices for both competence-based and knowledge-based aspects of qualifications should, where possible, be integrated with industry driven standards and requirements.

3. Assessment methods must be appropriate for the level and nature of the qualification units to be assessed. Methods of assessing achievement against learning outcomes and assessment principles must be accommodating and flexible, whilst remaining appropriate for both the level being assessed and industry expectations of learners at that level.

4. Evidence of knowledge and understanding must be recorded and be clearly attributable to the learner. This can be delivered using task based activity with questions and answer sessions, supported by assessor observation.

The choice and application of assessment methods must be consistent with these principles and will generally include:

- Direct Observation
- Written evidence (portfolio/workbook)
- Centre set assignment
- Centre set coursework
- Oral examination
- Professional/open discussion

Delivery Team Requirements

Tutors / Assessors

- Tutors / Assessors should have a detailed knowledge of, and be competent in, the occupational requirements of the units
- Tutors / Assessors should hold or be working towards the related professional qualifications for delivery and assessment as required
- This competence will have been acquired either in direct employment in the occupational role to which the unit relates, or in employment as a manager, supervisor or in-house trainer of employees carrying out the role
- It is unlikely that occupational competence will have been achieved in less than twelve months of employment but individuals with less experience could be considered as assessors if sufficiently occupationally competent

Internal Quality Assurers (IQAs)

- IQAs must have a thorough understanding of the structure, content and occupational requirements of the units that they are internally quality assuring. This understanding will have been acquired while either working directly within or delivering within the relevant occupational area in either an operational or a support function
- The level of understanding must be sufficient to allow the IQA to judge whether the assessor has fully assessed learners against all the principles within the unit
- It is unlikely that a person could have gained this level of understanding in less than twelve months of being employed but individuals with less experience could be considered as IQAs if they have the required level of experience, knowledge and understanding.

Technical / Expert Witness

Expert witnesses can be drawn from a wide range of people who can observe, 'measure and examine performance against the industry and qualification principles. These can include line managers and experienced individuals within a related sector-based organisation. The Technical Expert Witnesses should have proven practical experience and knowledge relating to the content of the principles being assessed.

It is unlikely that someone could become an expert in their entire job role in less than twelve months of being employed in their industry. They could, however, very quickly become an expert in the content of a single unit if this was the focus of their job role. The assessor should make a

judgement as to the level of expertise held by a potential Technical Expert Witness and, where necessary, this should be confirmed with the awarding organisation.

Assessment Materials

ETC Awards Ltd. (ETA) Assessment Materials are protected by copyright and are supplied only to Approved Centres for use solely for the purpose of the assessment of ETA learners.

Instructions for Conducting Assessment

the Approved Centre must either:

- secure approval of in-house assessment material by ETA's External Quality Assurance team prior to use
- use ETA Assessment Materials
- we recognise that reasonable adjustments may be considered at the time of assessment, please refer to the ETA Reasonable adjustments and considerations policy

All approved centres must then handle and store securely all Assessment Materials in accordance with the following:

- Assessment Material must be accessible to learners only during their programme
- The Approved Centre must not make public in any format the contents of any materials either in part or in full.
- Materials must be securely handled and under no circumstances shared with third party organisations or individuals
- The Approved Centre must seek permission from ETA through the External Quality Assurance team if they want to convert Material for alternative storage, retrieval and delivery in electronic formats.

All centre based assessment material must be agreed with ETA prior to use and will be subject to robust monitored during sampling and verification activity.

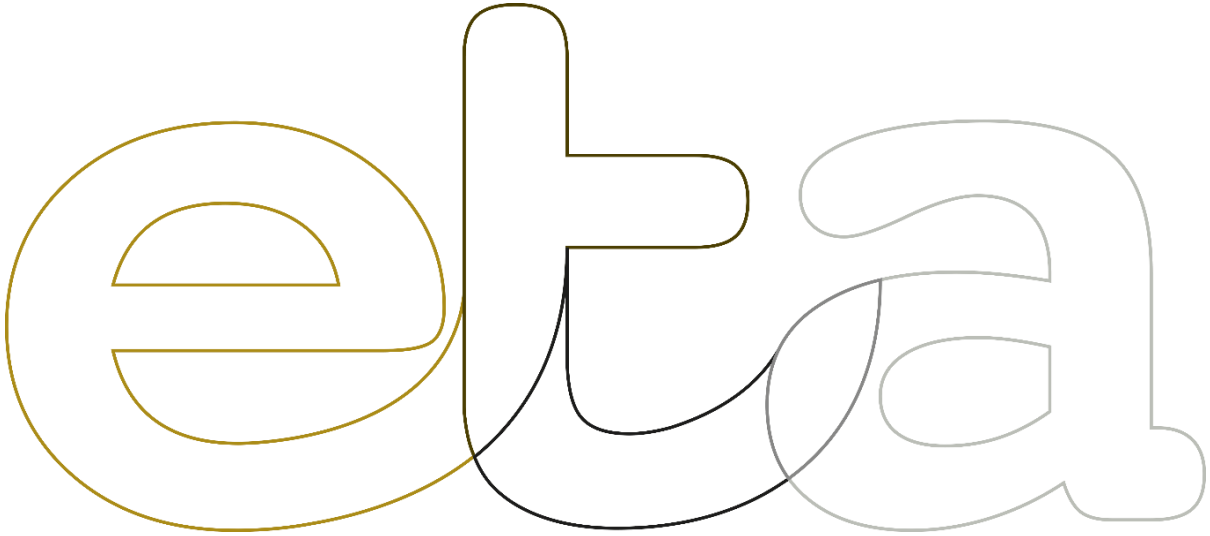
Level 2 Unit – Follow health and safety procedures for scientific or technical activities

Unit Reference Number		T/601/9366
Qualification Framework		RQF
Title		Follow health and safety procedures for scientific or technical activities
Unit Level		Level 2
Guided Learning Hours		35
Unit Credit Value		5
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Follow health and safety procedures for scientific or technical activities	1.1	Ensure that their work is carried out in accordance with workplace procedures	
		1.2	Identify health and safety standard operating procedures for all of the following: • workplace hazards • manual handling • unsafe practices • VDU & RSI Policies • spillages • other (please specify)	
		1.3	Follow established procedures for both of the following: workplace emergency (e.g. injury, spillage) workplace evacuation (e.g. fire, gas leak)	
		1.4	Accurately assess health and safety in relation to their work and the workplace	
		1.5	Use safe practices and the appropriate personal protective clothing and equipment for the work	
		1.6	Identify any breaches to health and safety procedures and report them to the appropriate person as soon as possible	
2.	Follow health and safety procedures for scientific or technical activities (continued)	2.1	Ensure that they maintain and keep tidy their work area to a standard of health and safety which is consistent	
		2.2	Prepare, maintain and use equipment and materials in accordance with manufacturer's instructions and local safety regulations	
		2.3	Recognise hazardous materials used in their work activities	
		2.4	Recognise three of the following workplace hazardous substances: • flammables (liquid or solid) • corrosive material • equipment or tools toxic/harmful	

			• material biological material radioactive • material water reactive material • explosive material • extreme temperature compressed gas • pyrophoric material oxidiser • unstable reactive • sensitising/irritant substance	
		2.5	Follow established procedures to protect themselves and others during work activities	
		2.6	Follow the correct procedure when an emergency arises or is suspected	
3.	Know how to follow health and safety procedures for scientific or technical activities	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 standard operating procedures, as set down in local operating manuals and schemes of work	
		3.4	Explain the importance of following manufacturer's instructions	
		3.5	Describe the techniques and processes they must use correctly in the workplace	
		3.6	Explain importance of wearing protective clothing, gloves and eye protection when handling hazardous materials	
		3.7	Describe the specific safety precautions to be taken when working with scientific or technical equipment and computer- based systems (to include such things as safety guidance relating to the use of visual display unit (VDU) equipment and work station environment (such as lighting, seating, positioning of equipment), and repetitive strain injury (RSI)	
		3.8	Identify the health and safety representatives (such as the Laboratory Safety Officer, Staff Health & Safety Representatives and First-Aiders)	
		3.9	Describe the location and correct use of emergency equipment (such a fire extinguishers, including the situations in which different types of fire extinguishers are used)	
		3.10	Describe the lines of communication and responsibilities in their department and their links with the rest of the organisation	

		3.11	Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve	
4.	Know how to follow health and safety procedures for scientific or technical activities (continued)	4.1	Describe the local procedures for emergency evacuation (including escape routes and assembly points)	
		4.2	Describe the location of fire alarms call points and how to operate them	
		4.3	Describe the location of spillage kits, and the procedures to follow in the event of spillages of chemicals and/or biological fluids and materials	
		4.4	Describe the control of substances hazardous to health (COSHH) regulations, and their application in the workplace	
		4.5	Describe the types of hazards which may be present in the workplace and how these can be controlled	
		4.6	Describe the correct storage and disposal procedures for hazardous materials	
		4.7	Describe the hazards associated with chemicals, radioactive substances and biological material	
		4.8	Describe the reasons for cleaning work surfaces and equipment	
		4.9	Explain why it is important to differentiate and segregate categories of waste	
		4.10	Describe the correct procedures for the storage, transport and disposal of waste	



Level 2 Unit – Use information recordings systems for scientific or technical activities

Unit Reference Number		H/601/9378
Qualification Framework		RQF
Title		Use information recordings systems for scientific or technical activities
Unit Level		Level 2
Guided Learning Hours		48
Unit Credit Value		6
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	1a. Use information recordings systems for scientific or technical activities	1.1	Ensure that their work is carried out in accordance with workplace procedures	
		1.2	Keep information systems up to date and store the information correctly and accurately	
		1.3	Use two of the following types of information system: • paper based • computer based • telephone • fax	
		1.4	Maintain the security and confidentiality of information at all times	
		1.5	Complete required back-up procedures regularly	
		1.6	Retrieve required information and distribute according to deadlines	
		1.7	Establish four of the following for work related activity: • date of request • person requesting activity • work location • scheme of work • work activity requirements • materials/resources needed	
2.	Use information recordings systems for scientific or technical activities (continued)	2.1	Communicate information to the relevant people when using information systems	
		2.2	Take appropriate action in the event of problems, to minimise hazards, waste loss of materials or resources and report to the relevant people	
		2.3	• Resolve two of the following problems associated with work activity: incorrect identification of requirements	

			• missing information • poor/unclear written request • requests exceed available supply	
		2.4	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines	
		2.5	Communicate the required information about the work done, in accordance with departmental and organisational procedures	
		2.6	Communicate information systems data with relevant people to include one of the following: • supervisor manager • team leader • head of department • health and safety officer • teacher or trainer	
		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 Use information recordings systems for scientific or technical activities	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	Describe the importance of correct identification, and any unique workplace coding system	
		3.6	Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation	
		3.7	Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve.	
		3.8	Describe the skills and procedures needed to do the routine tasks and	

			work activities allocated	
		3.9	Describe the importance of completing tasks and procedures to the required organisational standard	

4.	Know how to Use information recordings systems for scientific or technical activities (continued)	4.1	Describe the different types of information systems that can be used, including recording, filing, retrieval of information and distribution systems	
		4.2	Explain how to use backup systems and why they are important	
		4.3	Explain how to ensure the confidentiality and security of information at all times and why this is important	
		4.4	Explain why it is important to work within given time deadlines	
		4.5	Describe the methods to use for information storage and access	
		4.6	Explain why it is important to establish requirements accurately	
		4.7	Describe what documentation should be used	
		4.8	Describe who are the relevant people that should be supplied with the recorded information	
		4.9	Explain how to identify problems, and what is the appropriate action to take within the limits of their responsibility	

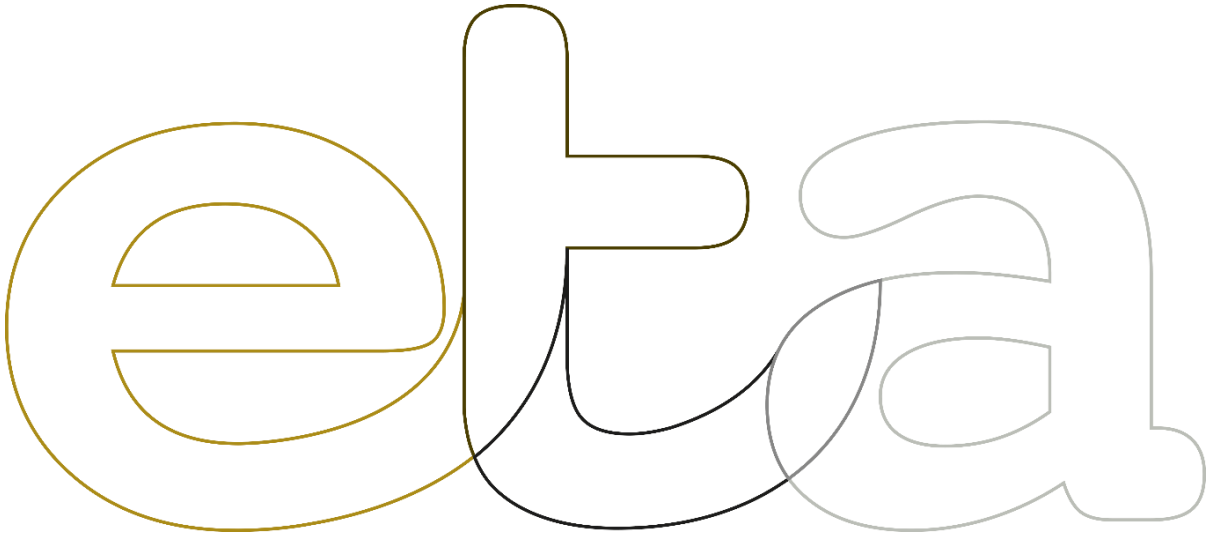
Level 2 Unit – Maintain effective and efficient working relationships for scientific or technical activities

Unit Reference Number		D/601/9569
Qualification Framework		RQF
Title		Maintain effective and efficient working relationships for scientific or technical activities
Unit Level		Level 2
Guided Learning Hours		25
Unit Credit Value		5
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Maintain effective and efficient working relationships for scientific or technical activities	1.1	Ensure that their work is carried out in accordance with workplace procedures	
		1.2	Use safe practices and the appropriate personal protection clothing and equipment (PPE) when doing scientific or technical activities	
		1.3	Establish and maintain effective working relationships in the workplace	
		1.4	Sustain positive working relationships by all of the following: • working in teams • supporting others • being cooperative and flexible • providing clear and accurate information	
		1.5	Maintain working relationships with two of the following: • colleagues in their own working group • supervisors/managers • more senior professionals/scientist • colleagues outside their normal workinggroup • persons external to their organisation	
		1.6	Meet workplace standards for timekeeping, appearance and behaviour	
		1.7	Deal with disagreements in an amicable and constructive way, so that good relationships are maintained	
2.	Maintain effective and efficient working relationships for	2.1	Maintain communication with others, to ensure that they are kept informed about any work plans or activities which may affect them	
		2.2	Be aware of the limits of their skills, and seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities	

	scientific or technical activities (continued)	2.3	Review their personal performance and development, with the appropriate people, at regular intervals	
		2.4	Review personal development objectives and targets, to include one of the following: • dual or multi-skilling • training on new equipment/technology • understanding of company working practices/procedures • plans and policies • increased responsibility • other specific requirements	
		2.5	Communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures	
		2.6	Record details of work done, and communicate the details to the appropriate people, using: • verbal report Plus one method from the following: • written or typed report • specific company documentation • computer-based record • electronic mail	
3	Know how to maintain effective and efficient working relationships for scientific or technical activities	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 the importance of correct identification and any unique workplace coding system	
		3.6	Describe the interactions which take place between their scientific or technical speciality and others where the same speciality is used	
		3.7	Explain how their scientific or technical work activities may affect others within the department and the workplace	
		3.8	Describe the lines of communication and responsibilities in their	

			department, and their links with the rest of the organisation	
		3.9	Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve	
4.	Know how to maintain effective and efficient working relationships for scientific or technical activities (continued)	4.1	Describe the lines of accountability within the department	
		4.2	Describe the reasons why good working relationships are important	
		4.3	Explain how to create and maintain good working relationships	
		4.4	Describe the methods of working effectively with others	
		4.5	Describe the problems that can affect relationships in the workplace	
		4.6	Describe the procedures for dealing with disagreements in the workplace	
		4.7	Describe the departmental performance review process, and their role in this process	
		4.8	Describe the reasons why effective communication is important, and the methods used for communicating effectively	



Level 2 Unit – Carry out routine maintenance, cleaning and checking of scientific or technical equipment

Unit Reference Number		K/601/9378
Qualification Framework		RQF
Title		Carry out routine maintenance, cleaning and checking of scientific or technical equipment
Unit Level		Level 2
Guided Learning Hours		46
Unit Credit Value		6
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Carry out routine maintenance, cleaning and checking of scientific or technical 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: • adhere to procedures for compliance with risk assessment, COSHH, use of personal protective equipment and other relevant safety regulations • ensure the safe isolation of laboratory equipment (such as electrical and fluids supply) • follow manufacturers' instructions, drawings and procedures for routine maintenance • check that the scientific or technical tools and equipment used are in a safe and usable condition • ensure that the equipment is kept free from foreign objects, dirt or other contamination • carry out auditory and visual checks on the operation of scientific or technical equipment • confirm that the scientific or technical equipment is operating correctly and is ready for use • return all tools, equipment and waste to the correct locations on completion of the maintenance activities • ensure that accurate, complete and legible records are kept of the maintenance activities	

		1.4	Confirm that the scientific or technical equipment is in a safe and usable condition, according to established procedures	
		1.5	Identify and report any equipment faults accurately to the team	
		1.6	Perform routine maintenance in accordance with manufacturers' instructions and relevant health and safety legislation	
2.	Carry out routine maintenance, cleaning and checking of scientific or technical equipment (continued)	2.1	Carry out maintenance and cleaning on two of the following scientific or technical categories: • biological equipment and/or instruments • chemical equipment and/or instruments • electronic equipment and/or instruments • weighing and measuring equipment and/or instruments • information technology equipment • engineering machines, equipment and/or instruments • other technical equipment or instruments	
		2.2	Confirm the correct operation and operating tolerances of the scientific or technical equipment, in accordance with established procedures	
		2.3	Record details of maintenance and operation checks, according to departmental procedures	
		2.4	Test the equipment to confirm that it functions correctly and record the equipment status	
		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 Plus one method from the following: • written or typed report • specific workplace documentation • computer-based record • electronic mail	
3.	Know how to carry out routine maintenance, cleaning and checking of scientific or technical 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 who they should report if they have problems that they cannot resolve	
4.	Know how to carry out routine maintenance, cleaning and checking of scientific or technical equipment (continued)	4.1	Explain the methods used for visually checking, and cleaning, of scientific or technical equipment	
		4.2	Explain the different types, condition and quantities of consumables required for the range of scientific or technical equipment maintained	
		4.3	Explain the methods for maintaining personal health and safety during the maintenance of equipment	
		4.4	Describe how to check that the scientific or technical equipment is working correctly and in accordance with the manufacturer's specifications	
		4.5	Explain the common types of equipment fault, and how these must be dealt with	
		4.6	Explain the department or person to whom equipment faults should be reported	
		4.7	Explain the methods used for keeping records of the maintenance, cleaning and calibration of scientific or technical equipment, and why this is important	
		4.8	Explain the procedures for disposal of any waste produced or of any equipment beyond repair	

Level 2 Unit – Prepare resources and equipment for scientific or technical learning activities

Unit Reference Number		K/601/9381
Qualification Framework		RQF
Title		Prepare resources and equipment for scientific or technical learning activities
Unit Level		Level 2
Guided Learning Hours		35
Unit Credit Value		6
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Prepare resources and equipment for scientific or technical learning activities	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	Confirm that the workplace has been cleared of previous activities and that services are working effectively	
		1.4	Obtain information about the scientific or technical learning activities to carried out	
		1.5	Obtain information about the resources and identify what is required for learning activities	
		1.6	Prepare and equip for one of the following learning activities: • timetabled lessons other supervised events • outside activities	
		1.7	Obtain and allocate sufficient resources for the learning activities	
2.	Prepare resources and equipment for scientific or technical learning activities (continued)	2.1	Distribute resources within the workplace according to the learners' requirements	
		2.2	Ensure that all resources are used in cost effective manner	
		2.3	Check hazards or potential risks in six of the following categories: • equipment • workplace • students/learners' • services (e.g. gas) • techniques used • materials/consumables	

			• procedures • atmosphere	
		2.4	Identify accurately any hazards or risks associated with the preparation of resources and take the appropriate action	
		2.5	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines	
		2.6	Communicate the required information about the work done, in accordance with departmental and organisational procedures	
3.	Know how prepare resources and equipment for scientific or technical learning activities	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	Describe the basic techniques and scientific or technical knowledge required to help prepare resources and equipment for student/learner learning activities	
		3.9	Describe how to locate other sources from which further scientific or technical knowledge can be obtained	
		3.10	Describe what learning activities can be prepared for	
4.	Know how to prepare resources and equipment for scientific or technical learning activities (continued)	4.1	Describe what hazards are associated with the learning activities	
		4.2	Describe what is the appropriate action to take with hazards	
		4.3	Describe how to identify appropriate scientific or technical resources, consumables and equipment for learning activities	
		4.4	Describe how to prepare the appropriate scientific or technical resources, consumables and equipment for learning activities	
		4.5	Describe how to identify defective scientific or technical resources, consumables or equipment and the appropriate action to take	

		4.6	Describe how to check that services are working effectively and safely and what action to take if they are not	
		4.7	Describe how to allocate resources cost effectively	
		4.8	Describe how to confirm that the workplace is fit to use	
		4.9	Describe when and how to use risk assessments	

Level 2 Unit – Clean and tidy the workplace after scientific or technical learning activities

Unit Reference Number		M/601/9382
Qualification Framework		RQF
Title		Clean and tidy the workplace after scientific or technical learning activities
Unit Level		Level 2
Guided Learning Hours		34
Unit Credit Value		5
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Clean and tidy the workplace after scientific or technical learning activities	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	Identify any workplace hazards associated with any materials, resources, consumables and equipment to be cleared	
		1.4	Check hazards and potential risks in all of the following categories: • equipment • workplace • environment • people • services e.g. gas, electricity • procedures • materials or consumable	
		1.5	Take appropriate action against identified hazards and clean up any spillages safely	
		1.6	Clean and tidy after one of the following learning activities: • timetabled lessons • other supervised events • outside activities	
		1.7	Ensure that all resources and equipment are cleaned and replenished as necessary before returning to their correct location for storage	

2.	Clean and tidy the workplace after scientific or technical learning activities (continued)	2.1	Dispose of waste safely and in accordance with workplace procedures	
		2.2	Confirm that the workplace is in a fit condition for further learning activities to relevant people	
		2.3	Confirm workplace is fit for use with relevant people to include one of the following: • supervisor • manager • team leader • head of department • health and safety officer • teacher or trainer	
		2.4	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines	
		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 Plus one method from the following: • written or typed report • specific workplace documentation • computer-based record • electronic mail	
3.	Know how to clean and tidy the workplace after scientific or technical learning activities	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 and 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	Describe the hazards or risks associated with cleaning and tidying after scientific or technical learning activities	
4.	Know how to clean and tidy the workplace after scientific or technical learning activities (continued)	4.1	Describe what is the appropriate action to take with hazards	
		4.2	Describe how to deal with spillages and what action to take	
		4.3	Describe how to check that services are working effectively and safely and what action to take if they are not	
		4.4	Describe how to store scientific or technical materials, resources, consumables and equipment safely and correctly	
		4.5	Describe the procedures for the safe storage and handling of scientific or technical materials, resources, consumables and equipment	
		4.6	Describe when and how to use risk assessment while cleaning and tidying the workplace	
		4.7	Explain the techniques and processes used for cleaning and tidying the workplace	
		4.8	Describe how to confirm when the workplace is fit to use.	

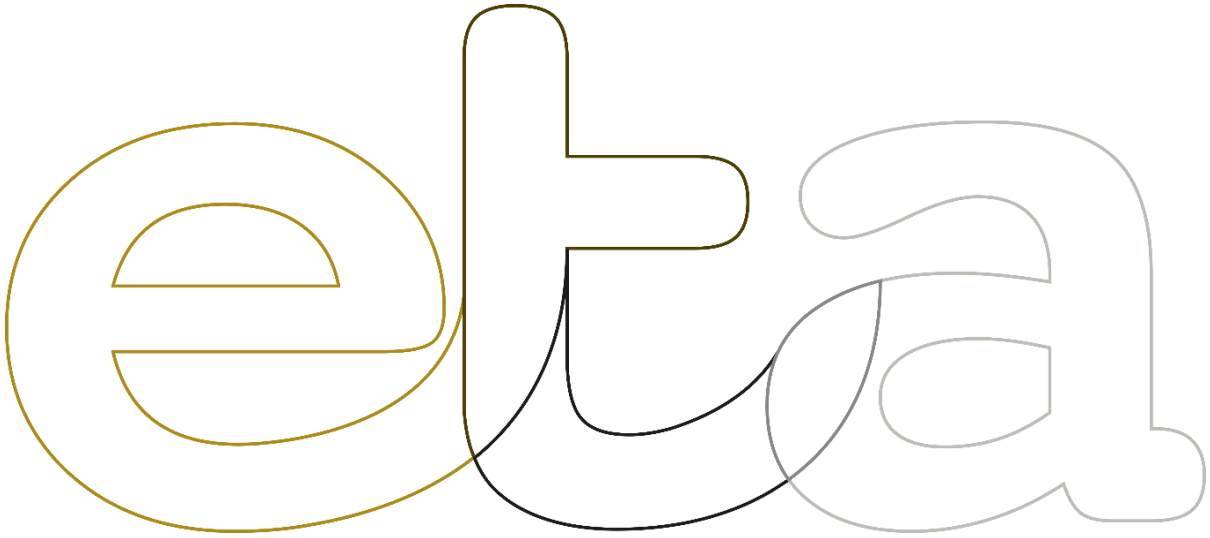
Level 2 Unit – Provide scientific or technical support for learning activities

Unit Reference Number		T/601/9383
Qualification Framework		RQF
Title		Provide scientific or technical support for learning activities
Unit Level		Level 2
Guided Learning Hours		46
Unit Credit Value		6
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Provide scientific or technical support for learning activities	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	Adopt appropriate working practices when supporting student activities and performance	
		1.4	Support teachers or trainers and follow their instructions when monitoring the learner activities	
		1.5	Follow instructions from one of the following supervisors: • supervisor • manager • team leader • head of department • health and safety officer • teacher or trainer	
		1.6	Provide scientific or technical support with all of the following activities: • timetabled lessons • other supervised events • outside activities	
		1.7	Provide scientific or technical support with all of the following elements: • equipment • services (e.g. gas, electricity) • materials • procedures	

			• techniques consumables
		1.8	Instruct the students/learners correctly and clearly on best working practices
2.	Provide scientific or technical support for learning activities (continued)	2.1	Encourage the students/learners to adopt best working practices when carrying out learning activities
		2.2	Monitor the student/learner activities and adhere to procedures and health and safety requirements
		2.3	Take the appropriate action to address problems encountered before, during and after learning activities
		2.4	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
		2.5	Report problems or concerns from the learning activities to the relevant people
		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 provide scientific or technical support for learning activities	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	Describe the basic techniques and knowledge required to help with

			student/learner learning activities	
		3.9	Describe how to promote best scientific or technical working practices amongst student/learners	
4.	Know how to provide scientific or technical support for learning activities (continued)	4.1	Describe how to encourage learners to ask questions	
		4.2	Describe what scientific or technical hazards risks are associated with the learning activities	
		4.3	Describe what scientific or technical risks associated with their own and the learners' activities	
		4.4	Describe what is the appropriate action to take with hazards	
		4.5	Describe how to deal with spillages, equipment failures and breakages	
		4.6	Describe how to identify problems with learners and the student/learner learning activities	
		4.7	Describe what are appropriate actions to take in the event of problems before, during and after learning activities	
		4.8	Describe when and how to use remedial, supportive and/or prohibitive actions.	



Level 2 Unit – Maintain stocks of resources, equipment and consumables for scientific or technical use

Unit Reference Number		M/601/9379
Qualification Framework		RQF
Title		Maintain stocks of resources, equipment and consumables for scientific or technical use
Unit Level		Level 2
Guided Learning Hours		37
Unit Credit Value		4
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Maintain stocks of resources, equipment and consumables for scientific or technical use	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	Count stocks and confirm that they are with the maximum/minimum levels required for the scientific or technical activities	
		1.4	Check stock levels for three of the following: • biological specimens and materials • electrical/electronic components/sub assemblies • scientific chemicals analysers, equipment or instruments • scientific or technical consumables • other (please specify)	
		1.5	Check stock items held in four of the following storage environments: • ambient temperature locations • refrigerators/freezers • zero or low light locations • hazardous chemical locations • equipment locations • consumable item locations	
		1.6	Check the packaging information on individual stock items, and confirm that critical details are within acceptable limits	

		1.7	Check packaging for five of the following information: • batch numbers • expiry dates • quantities • safety data sheets • delivery dates • hazard labels • volumes • weights • condition received	
		1.8	Identify, record and communicate requirements to replenish stocks at specified re-order levels	
2.	Maintain stocks of resources, equipment and consumables for scientific or technical use (continued)	2.2	Correctly handle and transport stock items, using the appropriate methods and techniques	
		2.3	Handle and transport both of the following types of material: • scientific or technical chemicals • scientific or technical equipment	
		2.4	Dispose, in the appropriate manner and locations, of stock or items that are damaged or outside acceptable limits for scientific or technical use	
		2.5	Access and update records for scientific or technical stock levels in the information system	
		2.6	Access and update information on the information system for all of the following: • booking items out from stock • booking items into stock • stock check levels • stock usage	
		2.7	Communicate the required information about the work done, in accordance with departmental and organisational procedures	
		2.8	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	

		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 maintain stocks of resources, equipment and consumables for scientific or technical use	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	Describe why it is important to maintain accurate records for scientific or technical resources, equipment and consumables	
		3.9	Explain the types and range of scientific or technical resources, equipment and consumables used in the workplace, and how they have to be checked	
4.	Know how to maintain stocks of resources, equipment and consumables for scientific or technical use (continued)	4.1	Describe how to check the packaging information on stock (such as batch numbers and expiry dates)	
		4.2	Describe how and explain why it is important to identify materials or chemicals that should not be stored together	
		4.3	Explain the range of storage environments used to store scientific or technical resources equipment and consumables for workplace use	
		4.4	Describe how to label new stock items correctly, and how to record the information in the workplace information system	
		4.5	Describe where and how stock items should be stored so they remain suitable for scientific or technical use	
		4.6	Describe how to monitor and control stock levels for scientific or technical use	

		4.7	Describe how to dispose of waste or damaged stock items, in accordance with workplace procedures.	
		4.8	Describe how to resolve issues with delivered damaged or incomplete replacement stock	

Level 2 Unit – Prepare compounds and solutions for scientific or technical use

Unit Reference Number		M/601/9379
Qualification Framework		RQF
Title		Prepare compounds and solutions for scientific or technical use
Unit Level		Level 2
Guided Learning Hours		37
Unit Credit Value		4
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Prepare compounds and solutions for scientific or technical use	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	Use two of the following types of protective clothing and equipment: • laboratory coat/apron/overall • dust mask/respirator gloves • safety glasses or goggles • full face visor or shield • fume cupboard	
		1.4	Use balances for accurately weighing out materials	
		1.5	Carry out weighing activities using balance (scales), using two of the following accuracies: • grams • milligrams • micrograms	
		1.6	Measure out required concentrations of liquids for scientific or technical use	
		1.7	Measure out solutions using two of the following: • automated pipettes • graduated/bulb pipettes • syringes • graduated cylinders/beakers/tubes • burettes volumetric flasks • other (please specify)	

2.	Prepare compounds and solutions for scientific or technical use (continued)	2.1	Measure specific volumes of liquids and weights of solids for scientific or technical use	
		2.2	Calculate the concentrations of solutions, the amounts and volumes required, using two of the following: • moles per litre • grams per litre • parts per million • mass percent • other (please specify)	
		2.3	Make up known volumes of solutions to a specified concentration, using both of the following: • by measuring and dissolving the correct amount of solid in the correct volume of diluent/solvent • by dilution from a concentrated stock solution	
		2.4	Weigh and prepare three of the following types of compound or solution: • solids that do not readily lose or gain weight (moisture or solvent) • solids that readily lose or gain weight (moisture or solvent) • solutions (by dilution from a known concentration) • solutions (at actual molecular weight)	
		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 Plus one method from the following: • written or typed report • specific workplace documentation • computer- based record • electronic mail	
3.	Know how to prepare compounds and solutions for scientific or technical use	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	Describe how to calculate mass/mole calculations	
4.	Know how to prepare compounds and solutions for scientific or technical use (continued)	4.1	Describe how to convert between metric and imperial measures and vice versa	
		4.2	Describe how to select the appropriate balance and scale for less than 100mg, 100mg to 5g, and 5g and above	
		4.3	Describe how to check that their equipment is clean, dry, free of chips and ready for use	
		4.4	Describe how to measure and weigh solids and liquids for scientific or technical use	
		4.5	Describe how to convert between different units of concentration (such as moles/litre, grams/litre, percent mass per volume and parts per million)	
		4.6	Describe how to calculate dilution factors and dilution volumes to make solutions from concentrated stock solutions	
		4.7	Describe how to choose the appropriate measuring equipment for the scale, accuracy and precision required for the task	
		4.8	Describe how to clean and maintain weighing and measuring equipment (such as pipettes, balances)	

Level 2 Unit – Prepare new scientific or technical methods, resources and equipment for learning

Unit Reference Number		A/601/9384
Qualification Framework		RQF
Title		Prepare new scientific or technical methods, resources and equipment for learning
Unit Level		Level 2
Guided Learning Hours		81
Unit Credit Value		12
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Prepare new scientific or technical methods, resources and equipment for learning	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	Clarify the requirements of the new method, resources or equipment to be used with relevant people	
		1.4	Clarify the new or modified method with one of the following people: • supervisor manager • supervisor • manager • team leader • head of department • health and safety officer • teacher or trainer	
		1.5	Confirm that the new or modified method is appropriate and cost effective for the learning activity	
		1.6	Identify the requirements needed for one of the following new or modified learning activities: • timetabled lessons • other supervised events • outside activities	
		1.7	Identify the resources and/or equipment required for the new or modified learning activity method	
		1.8	Assess and give advice on the hazards and risks associated with the preparation of the new or modified method	

2.	Prepare new scientific or technical methods, resources and equipment for learning (continued)	2.1	Assess and give advice on three of the following hazards and risks: • harmful/toxic material • sensitising/irritant material • high voltage item • highly flammable material • oxidising material • extreme temperature item • radioactive material • corrosive material • biohazard material • electrostatic discharge item • manual handling	
		2.2	Test the procedure for the new or modified methods and record the results	
		2.3	Evaluate and modify the new or modified method in partnership with the relevant people	
		2.4	Evaluate all of the following for the new or modified learning activities with relevant people: • equipment • services (e.g. gas, electricity) time required • costs • materials • procedures • techniques • hazards and risks • learning outcomes	
		2.5	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines	
		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 prepare new scientific or technical methods, resources and equipment for learning	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	Describe the basic techniques and scientific or technical knowledge required to prepare and test new or modified methods	
		3.9	Describe the types of scientific or technical methods can be prepared and tested	
4.	Know how to prepare new scientific or technical methods, resources and equipment for learning (continued)	4.1	Describe the scientific or technical resources are required and available	
		4.2	Describe the learning activity constraints are in force	
		4.3	Describe what constitutes a scientific or technical hazard	
		4.4	Describe when and how to undertake a risk assessment	
		4.5	Describe how to test the new or modified scientific or technical method	
		4.6	Describe how to organise their work according to workplace deadlines	
		4.7	Describe how to record and evaluate the results of the new or modified scientific or technical method	
		4.8	Describe how to modify the scientific or technical method, and when this may be required	
		4.9	Describe what documentation should be used for new or modified learning activities	

Level 2 Unit – Demonstrate scientific or technical methods, techniques and skills to others in the workplace

Unit Reference Number		Y/601/9733
Qualification Framework		RQF
Title		Demonstrate scientific or technical methods, techniques and skills to others in the workplace
Unit Level		Level 2
Guided Learning Hours		56
Unit Credit Value		8
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Demonstrate scientific or technical methods, techniques and skills to others in the workplace	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	Agree the learning/training objectives of the demonstration with the relevant people	
		1.4	Agree the requirements for the demonstration with one of the following people: • supervisor manager • team leader • head of department • health and safety officer • teacher or trainer	
		1.5	Gather relevant and accurate information for the demonstration	
		1.6	Establish both of the following for the demonstration: • scientific or technical methods and skills • health and safety precautions Plus six of the following: • place for the demonstration • start and finish time for the demonstration • the number of learners/students • equipment required • services required (e.g. gas, electricity) materials required • workplace procedures to be used	

			• consumables required
		1.7	Prepare the content of the demonstration to meet the learning needs of learner/students
2.	Demonstrate scientific or technical methods, techniques and skills to others in the workplace (continued)	2.1	Confirm that the location for the demonstration allows for optimum visibility and conforms to health and safety requirements and regulations and guidelines
		2.2	Prepare answers to anticipated questions
		2.3	Demonstrate scientific or technical methods, techniques and skills in a manner appropriate to learner/student's needs
		2.4	Demonstrate methods and skills in one of the following locations: • timetabled lessons • other supervised events • outside activities
		2.5	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
		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 demonstrate scientific or technical methods, techniques and skills to others in the workplace	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 the importance of correct identification, and any unique workplace coding system
		3.6	Describe the organisational requirements for maintaining the security of the workplace (e.g. 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	Describe what are the approved scientific or technical working practices and why it is important to follow them at all times	
		3.10	Describe what workplace procedures apply and why it is important to follow them at all times	
		3.11	Describe what are the basic techniques and skills required to help prepare for scientific or technical demonstrations	
		3.12	Explain how to select the materials and equipment for the demonstration activity	
		3.13	Explain how to prepare resources for demonstration activity	
4.	Know how to demonstrate scientific or technical methods, techniques and skills to others in the workplace (continued)	4.1	Explain how to demonstrate the scientific or technical methods, techniques skills to others in the workplace	
		4.2	Explain how to promote best working practice amongst learners/students	
		4.3	Explain how to monitor learner/student's learning activities	
		4.4	Explain how to encourage learners/students to ask questions	
		4.5	Describe what learning activities can be prepared by learners/students, and how to help them to prepare for the demonstration activities	
		4.6	Describe what hazards are associated with the demonstration activities	
		4.7	Describe the range of scientific or technical methods and skills that can be demonstrated	
		4.8	Explain how to deal with spillages and what action to take	
		4.9	Describe what are the procedures for the safe storage and handling of materials and equipment	
		4.10	Explain how to identify problems that might occur in the demonstration	
		4.11	Describe what are appropriate actions to take in the event of problems	
		4.12	Explain when and how to use remedial, supportive and / or prohibitive actions	
		4.13	Explain the reasons why effective communication is important, and the methods used for communicating effectively	

Level 2 Unit – Carry out simple scientific or technical tests using manual equipment

Unit Reference Number		F/601/9385
Qualification Framework		RQF
Title		Carry out simple scientific or technical tests using manual equipment
Unit Level		Level 2
Guided Learning Hours		59
Unit Credit Value		7
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
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	Carryout 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 meets 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	
		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	2.1	Conduct manual laboratory tests on samples in accordance with the correct procedures and techniques	

	tests using manual equipment (continued)	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 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	
		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	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	

	(continued)		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	

Level 2 Unit – Carry out simple scientific or technical tests using automated equipment

Unit Reference Number		J/601/9386
Qualification Framework		RQF
Title		Carry out simple scientific or technical tests using automated equipment
Unit Level		Level 2
Guided Learning Hours		70
Unit Credit Value		10
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
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 • 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	
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	
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	
		3.11	Describe how to start and shut down the scientific or technical equipment, including what to do in an emergency	
4.	Know how carry out simple scientific or technical tests using automated equipment (continued)	4.1	Explain why it is 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	
		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	

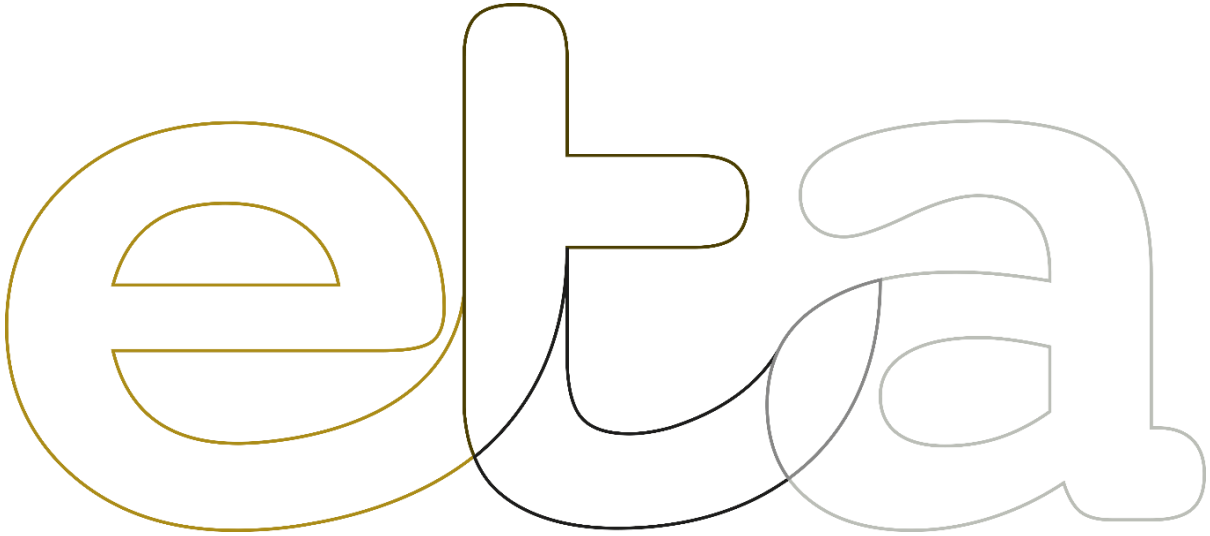
Level 2 Unit – Prepare scientific or technical samples for testing activities

Unit Reference Number		L/601/9387
Qualification Framework		RQF
Title		Prepare scientific or technical samples for testing activities
Unit Level		Level 2
Guided Learning Hours		58
Unit Credit Value		8
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Prepare scientific or technical samples for testing activities	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 they establish the identity of the sample and check its integrity	
		1.4	Check sample integrity against two of the following factors: • defects • damage decomposition • homogeneity • other (please specify)	
		1.5	Confirm the relevant controlled conditions for sample preparation are present	
		1.6	Check two of the following controlled conditions: • health and safety environment • time • recording system cleanliness • external influence giving rise to variations	
		1.7	Prepare samples for scientific or technical testing in accordance with workplace procedures	
2.	Prepare scientific or technical samples for testing activities (continued)	2.1	Prepare samples using two of the following methods: • grinding • pulverising dividing mixing • centrifuging • filtering/sieving diluting weighing • hydrating siphoning • other (please specify)	
		2.2	Identify and store test samples correctly until required	
		2.3	Deal with any waste material in accordance with workplace procedures	

		2.4	Work safely at all times, complying with health and safety, environmental and other relevant regulations and guidance	
		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 Plus one method from the following: • written or typed report • specific workplace documentation • computer-based record • electronic mail	
3.	Know how to prepare scientific or technical samples for testing activities	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	Describe what methods of sample preparation to use	
		3.9	Explain why the right sample preparation conditions are important	
		3.10	Describe how to control sample preparation conditions	
		3.11	Describe how to check integrity and identity of samples prepared	
4.	Know how prepare scientific or technical samples for testing activities (continued)	4.1	Explain the types of sample and container used for transport and scientific or technical testing	
		4.2	Explain the types of equipment used to prepare samples	
		4.3	Explain why it is important to carry out pre-use check and identify the status of equipment before it is used to prepare samples	
		4.4	Describe how to load and unload equipment used in sample preparation	
		4.5	Explain the procedure to be followed when samples do not match up with the 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 was received in the workplace	
		4.8	Explain the methods used for numbering and labelling samples in the workplace	
		4.9	Explain the procedures for storing prepared samples when archiving is required	
		4.10	Explain the factors which might adversely affect the integrity of the sample during storage or transport	



Level 2 Unit – Carry out sampling operations for scientific or technical tests

Unit Reference Number		L/601/9387
Qualification Framework		RQF
Title		Carry out sampling operations for scientific or technical tests
Unit Level		Level 2
Guided Learning Hours		58
Unit Credit Value		8
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
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 • 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)	
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	
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	
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	

Level 2 Unit – Following aseptic procedures in the laboratory environment

Unit Reference Number		T/601/2031
Qualification Framework		RQF
Title		Following aseptic procedures in the laboratory environment
Unit Level		Level 2
Guided Learning Hours		51
Unit Credit Value		9
Unit Grading Structure		Pass / Fail

Learning Outcome		**Assessment Criteria - The learner can**		**Criteria expansion**
1.	Following aseptic procedures in the laboratory environment	1.1	Ensure that their work is carried out in accordance with standard operating procedures	
		1.2	Dress in the appropriate personal protection equipment (PPE) required for the clean room or clean work area environment, in accordance with the correct procedure	
		1.3	Use three of the following types of personal protective equipment for clean room working: • body suit face mask gloves • respirator air supply • other (please specify)	
		1.4	Prior to entering clean room, carry out all of the following: • use the correct issue of job instructions and specifications • follow risk assessment procedures and COSHH regulations • ensure that they are appropriately dressed and uncontaminated before entering the area • carry out their activities in line with organisational procedures store accurate records of their activities, in accordance with appropriate procedures	
		1.5	Carry out visual quality checks on their personal protection equipment prior to entering the working environment	
		1.6	Satisfy all the following company clean room/clean work area requirements: • use appropriate clothing/personal protective equipment (PPE) (such as suits, gowns, coats, hoods, hats, caps, helmets, other head wear, boots, overshoes, other forms of footwear, safety goggles, visors, gloves)	

			• comply with hazard protection (such as breathing apparatus, gloves, apron/smock, other forms of PPE or clothing required) • deal appropriately with damaged or dirty clothing/PPE (such as reporting damage, replacement, safe removal and cleaning or disposal, subjected to acid/hazardous substance spills, damaged/dirty labelling) • store specified clothing/PPE correctly when not in use • ensure the proper cleaning/laundering/maintenance of clothing/PPE • dispose of single-use clothing and equipment in the correct location • report any hazards or breaches of protocol	
2.	Following aseptic procedures in the laboratory environment (continued)	2.1	Use personal protective equipment in one of the following clean room environments: • health/disease screening biochemical • processing biotechnology processing • drug development • agro-biotech research • other (please specify)	
		2.2	Follow aseptic techniques in the laboratory	
		2.3	Identify and follow protocol methods and procedures that satisfy all of the following: • the safety of people • containment/integrity of the specimen/product • containment/integrity of the clean room/work area • appropriate industry standards and protocols	
		2.4	Remove personal protection equipment on completion of clean room or clean work area activities, and dispose/store in line with the correct procedure	
		2.5	Communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures	
		2.6	Record details of the work activity, and communicate the details to the appropriate people, using: • verbal report Plus one method from the following: • written or typed • report	

			• specific company documentation • computer-based record • electronic mail	
3.	Know how to follow aseptic procedures in the laboratory environment	3.1	Describe the health and safety requirements of the area in which they are carrying out the laboratory activities	
		3.2	Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities	
		3.3	Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace	
		3.4	Describe the importance of wearing protective clothing, gloves and eye protection when handling materials (such as biochemical substances, biological pathogens and/or antigens), and the equipment used to contain and process them	
		3.5	Describe the manufactured materials and batch process tracking and records system	
		3.6	Describe the types of handling and sorting system, and the procedures used for materials undergoing processing in the laboratory facilities	
		3.7	Describe the importance of correct identification, and any unique organisational or laboratory numbers	
		3.8	Describe the organisational requirements for maintaining the security of the workplace	
		3.9	Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation	
4.	Know how to follow aseptic procedures in the laboratory environment (continued)	4.2	Explain how to put on clean room clothing and footwear correctly	
		4.3	Describe the procedures for entering and exiting the clean room or clean work area, and the authority needed to do so	
		4.4	Describe the classification of the relevant clean room or clean work area, and how this impacts upon them	
		4.5	Describe the industry standards/classifications for clean rooms and clean work areas	
		4.6	Describe the company requirements for clothing and personal protective equipment, and the reasons why such clothing and equipment must be used	
		4.7	Describe the procedures and methods for maintaining issued clothing and personal protective equipment	
		4.8	Explain how to apply procedures for dealing with damaged or dirty clothing and personal protective equipment	
		4.9	Explain how to store clothing and personal protective equipment correctly	

		4.10	Describe the laundering/cleaning/maintenance procedures relating to the issued clothing and personal protective equipment	
		4.11	Describe the aseptic techniques that are applied and used in the laboratory	
		4.12	Explain how to dispose correctly of single-use personal protective equipment	
		4.13	Describe the policy and procedures relating to personal items (such as body lotions, makeup, jewellery, contact lenses, footwear, own clothing)	