

SEMLATA3-05

Provide technical advice and guidance for scientific or technical activities



Overview

This unit covers the competences you need to provide technical advice and guidance for scientific or technical activities, in accordance with approved procedures and practices. You will be expected to identify and use relevant understanding, methods and skills to complete tasks and address problems that, whilst well defined, have a measure of complexity. You will be expected to initiate and complete tasks and procedures as well as exercise autonomy and judgement within limited parameters. You will also be aware of different perspectives or approaches used within the workplace.

On completion of workplace activities, you will be required to show you have addressed problems that, whilst well defined, may be complex and non-routine. You will be expected to show you have identified, selected and used appropriate scientific or technical skills, methods and procedures. You will use appropriate investigation to inform actions and review how effective these methods have been.

Your responsibilities will require you to comply with organisational policy and procedures for the scientific or technical operations undertaken, and to report any problems with the activities, materials or equipment that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You will be expected to initiate and complete tasks and procedures, including, where relevant, responsibility for supervising or guiding others. You will be expected to exercise autonomy and judgement within limited parameters, taking personal responsibility for your own actions and for the quality and accuracy of the work that you carry out. You will be expected to work to instructions, with a minimum of supervision, either on your own or as part of a team

Your underpinning knowledge will enable you to use factual, procedural and theoretical understanding to complete scientific or technical tasks and address problems that, whilst well defined, may be complex and non-routine. You will be able to interpret and evaluate relevant workplace information and ideas. You will have an understanding of the scientific or technical process used, and its application, and will know about the equipment, materials and consumables in adequate depth to provide a sound background for carrying out the activities to the required specification.

You will understand the safety precautions required when carrying out scientific or technical activities. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

SEMLATA3-05

Provide technical advice and guidance for scientific or technical activities

Performance criteria

You must be able to:

- P1 ensure that your work is carried out in accordance with workplace procedures
- P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
- P3 work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines
- P4 ensure that you have accurate and up-to-date information on the scientific or technical activities for which advice and guidance is being sought
- P5 determine the extent of the advice and guidance required
- P6 Provide valid and up-to-date information, advice and guidance, as necessary
- P7 analyse any problems in full and provide effective advice that will maintain the quality and progress of the work
- P8 communicate the required information about the work done, in accordance with departmental and organisational procedures

SEMLATA3-05

Provide technical advice and guidance for scientific or technical activities

Knowledge and understanding

You need to know and understand:

Sector specific

- K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
- K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
- K3 the scientific or technical techniques and processes you must use correctly in the workplace

You need to know and understand:

Organisation specific

- K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
- K5 the importance of correct identification, and any unique workplace coding system
- K6 the organisational requirements for maintaining the security of the workplace (e.g. access or aseptic conditions)
- K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
- K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve

You need to know and understand:

Equipment/Process specific

- K9 the regulations and guidelines that are relevant to the work area
- K10 how to obtain information on regulations and guidelines
- K11 how to obtain and interpret drawings, charts, specifications and other documents that can be used when giving technical advice and guidance
- K12 a sound understanding of the activities in which the technical guidance is being given
- K13 how to identify opportunities for giving technical advice, guidance and support
- K14 how to plan and prepare for providing technical guidance
- K15 the methods and techniques involved in problem solving
- K16 how to deal with customer complaints and requests.
- K17 how to review and adjust approaches to the provision of technical guidance, in the light of experience gained (such as offering written summaries of guidance)
- K18 the techniques for offering and providing technical guidance (such as verbally, one to one, one to many, in written form, using diagrams, drawings or other technical information)

SEMLATA3-05

Provide technical advice and guidance for scientific or technical activities

- K19 how to use a variety of communication methods, in appropriate combination (such as verbal, verbal/written combinations)
- K20 the document control and reporting procedures that should be used
- K21 the reasons why effective communication is important, and the methods used for communicating effectively

SEMLATA3-05

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Additional Information

Scope/range related to performance criteria

You must be able to:

1. provide technical advice and guidance for two of the following groups of people:
 - 1.1 colleagues
 - 1.2 customers (e.g. distributors, end users, clients)
 - 1.3 contractors
 - 1.4 others in related technical activity areas
2. provide technical support for **two** of the following scientific or technical activities:
 - 2.1 providing technical support
 - 2.2 complex sampling
 - 2.3 demonstration and instruction
 - 2.4 planning sampling and testing
 - 2.5 carrying out investigations
 - 2.6 team leading/coaching
 - 2.7 complex testing
 - 2.8 small scale processing
3. provide technical advice and guidance on **four** of the following:
 - 3.1 equipment operating detail (function)
 - 3.2 specific or specialist equipment required
 - 3.3 equipment performance parameters
 - 3.4 resource usage
 - 3.5 physical characteristics (dimensions, weight)
 - 3.6 timing/delivery details
 - 3.7 environment considerations/operating conditions
 - 3.8 cost/budget estimation/details
 - 3.9 scientific or technical methods
 - 3.10 quality requirements/control
 - 3.11 processing requirements
 - 3.12 maintenance/cleaning/calibration frequency
 - 3.13 work instructions or procedures
 - 3.14 aseptic procedures
 - 3.15 output volume required
 - 3.16 training required
 - 3.17 resource requirements
 - 3.18 customer interface requirements
 - 3.19 equipment/component interfacing
 - 3.20 safety/regulations/guideline requirements
4. Deal appropriately with **all** of the following:
 - 4.1 reported problems found during the scientific or technical activity
 - 4.2 recorded deviations from agreed plans and schedules
 - 4.3 customer requests/complaints

SEMLATA3-05

Provide technical advice and guidance for scientific or technical activities

5. record and communicate details of work done, to the appropriate people, using:
 - 5.1 verbal reportplus **one** method from the following:
 - 5.2 written or typed report
 - 5.3 computer-based record
 - 5.4 specific workplace documentation
 - 5.5 electronic mail

SEMLATA3-05

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