



Australian Government

MSL974008 Capture and manage scientific images

Release: 1

MSL974008 Capture and manage scientific images

Modification History

Release 1. Supersedes and is equivalent to MSL974008A Capture and manage scientific images

Application

This unit of competency covers the ability to capture accurate and reproducible images of scientific (environmental, medical and technical) subjects using a scientific approach and workplace procedures/protocols to ensure the integrity of the image. It also includes the ability to generate and maintain pre- and post-image capture records to ensure that images can be reproduced.

This unit of competency is applicable to laboratory technicians in all industry sectors. Personnel who capture images as a substantial part of their job role, should consider accessing the following units of competency from the *CUA Creative Arts and Culture Training Package*:

- CUAPHI402 Apply photo imaging lighting techniques
- CUAPHI302 Capture photographic images
- CUAPHI401 Capture images in response to a brief
- CUAPHI303 Process photo images to work-print and file stage
- CUAPHI510 Produce technical photo images.

While no specific licensing or certification requirements apply to this unit at the time of publication, laboratory operations are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

Pre-requisite Unit

Nil

Competency Field

Testing

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|-----------------------------------|-----|--|
| 1 | Establish requirements for | 1.1 | Define requirements and purpose of the work and create a brief |
|---|-----------------------------------|-----|--|

	image capture	1.2	Choose an imaging technique that maintains the integrity and veracity of the subject and fulfils the work requirements
		1.3	Plan the work using technical knowledge to ensure an effective and efficient result
2	Plan and set up the shoot	2.1	Select and assemble the required equipment
		2.2	Follow ethical and legal work practices at all times
		2.3	Assess risks or hazards and implement safety procedures
		2.4	Prepare the subject to achieve the brief
3	Capture and reproduce the required image	3.1	Expose media or film and accurately document the work in progress
		3.2	Review the image against the work requirements and repeat if necessary
		3.3	Reproduce the image to specification
4	Keep records and deliver images	4.1	Accurately and retrievably record the request, technical specifications and images so that they are retrievable
		4.2	Store records safely and securely to archival standards
		4.3	Follow copyright and crediting policies and procedures
		4.4	Make the images available to the client, discuss the results and ensure that requirements have been met

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Scientific imaging techniques

Scientific imaging techniques include one or more of:

- photographic (digital, transparencies and prints)
- video
- other non-visible light sources, such as ultraviolet (UV) light, fluorescence and phosphorescence
- direct transformation from images to data, such as reading of DNA sequencing gels
- X-ray and auto-radiations
- micrographs and electron micrographs

Scientific subjects

Scientific subjects include, but are not limited to, one or more of:

- building sites, environmental survey and monitoring sites
- accident or incident sites and injuries
- forensic evidence
- biological specimens
- histological sections
- live animals
- chromatography gels

Purpose of the image

Purpose of the image includes, but is not limited to, one or more of:

- publication as a thesis
- presentation on the web
- temporal serial recording of changes over time
- display as a poster, diorama, print or projection
- preview, snapshot or proof of an image for production at a later stage
- records of data for inclusion in databases
- use in forensic investigation or court proceedings

Ethical and legal work practices

Ethical and legal work practices include one or more of :

- industry codes of practice, contracts, permits, intellectual property (IP), crediting, plagiarism and copyright

- moral rights, model release, etiquette, decorum and sensitivity towards the subject, and confidentiality

Production of images

Production of images includes one or more of:

- sending images for processing
- processing the images
- use of commercial software

Storage of records

Storage of records includes one or more of:

- the brief, technical specifications and images
- file management (back-ups, data retrieval and storage)
- paper-based, electronic or digital

Safety procedures

Safety procedures include, but are not limited to, one or more of:

- recognising and observing hazard warnings and safety signs
- use of personal protective equipment (PPE), such as hard hats, hearing protection, gloves, safety glasses, goggles, face guards, coveralls, gowns, body suits, respirators and safety boots
- following required containment procedures through the use of appropriate equipment, such as biohazard containers, laminar flow cabinets, Class I, II and III biohazard cabinets and Class PCII, PCIII, and PCIV physical containment facilities
- use of material safety data sheets (MSDS)
- handling and storage of all hazardous materials and equipment in accordance with labelling, MSDS and manufacturer instructions
- following established manual handling procedures

Work health and safety (WHS) and environmental management requirements

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples
- accessing and applying current industry understanding

of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health, where relevant

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSL974008A Capture and manage scientific images

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL974008 Capture and manage scientific images

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Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- capturing and delivering accurate and reproducible images of at least five (5) scientific subjects using a scientific approach and workplace procedures/protocols to ensure the integrity of the images
- creating and interpreting a brief
- selecting and applying an imaging technique that best meets the specifications and purpose of the job
- planning the job, including:
 - type of equipment, image and media used
 - site and conditions
 - preparation and positioning of the subject
 - technical requirements
 - back-up method
 - specifications of final product
- using a back-up system of image capture when shooting images
- producing consistent high quality, cost effective outcomes for clients
- keeping accurate records that allow future replication of images
- working safely and in an ethical manner consistent with legislation, regulations and codes of practice.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- workplace policies and procedures for capturing and managing scientific images
- repercussions of manipulation of images and differences between adjustment and manipulation
- scientific approach and protocols to ensure integrity of images
- veracity of different types of storage media
- relevant copyright, moral rights and intellectual property (IP) issues and legislation
- relevant hazards, work health and safety (WHS) and environment requirements.

Assessment Conditions

- Judgment of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL975015 Prepare animal and plant material for display
- Holistic assessment methods include:
 - review of portfolio of work completed by the candidate
 - feedback from clients and supervisor about the candidate's ability to produce consistent high quality, cost-effective outcomes
 - review of case studies that assess the candidate's approach to different subjects and use of a variety of imaging techniques
 - oral and/or written questions covering technical aspects and procedures used to capture and manage scientific images as part of job role.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - facilities, equipment (e.g. lighting, backdrops, camera systems and accessories) and materials required for image capture
 - workplace procedures, equipment manuals, industry catalogues and journals
 - job requirements, specifications and/or briefs, and records.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

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