



**Australian Government**

# **MSL60116 Advanced Diploma of Laboratory Operations**

**Release 1**

# **MSL60116 Advanced Diploma of Laboratory Operations**

## **Modification History**

Release 1. Supersedes and is equivalent to MSL60109 Advanced Diploma of Laboratory Operations

## Qualification Description

This qualification covers the skills and knowledge required to supervise laboratory operations within a work area or project team.

Employment outcomes targeted by this qualification include laboratory supervisors, senior technical officers and similar personnel.

Senior technicians or laboratory supervisors are generally responsible for the planning, allocation of tasks, coordination, quality assurance, recording and reporting of laboratory outputs within their section. This requires significant judgement about work sequences, and choice of appropriate technology and procedures to ensure that products and services meet customer expectations and are provided safely and efficiently in keeping with the enterprise business plan. Under broad direction from scientists/medical staff/engineers, the senior technician/supervisor accepts responsibility for the day-to-day operation of his/her work/functional area.

They are often responsible for the effective implementation of operational policies and the technical training of personnel in their work area. They also contribute significantly to the development of these policies through the application of specialised technical knowledge.

The work of laboratory supervisors involves frequent peak periods, multiple and competing demands and frequent interruptions. Immediate decisions are often required. They must be adaptable to deal with the demands brought about by any of a number of causes. For example:

- a range of demanding clients, suppliers or contractors
- changes in technology
- regularly changing priorities.

In the course of their normal work, they:

- plan, allocate and monitor resources for their work area and are responsible for their work group's outputs
- apply in-depth technical knowledge and skills to deliver the variety of products and services associated with the work area
- explain complex instructions and procedures to others
- define and solve complex problems by investigating, developing and testing alternatives in response to vague or ill-defined information that is not readily accessible and requires selective analysis
- make significant contributions to the development of technical and operational policy and procedures within a function or work area
- liaise with outside organisations, customers, suppliers and contractors on technical matters
- provide technical information to internal and external customers
- often provide workplace training and assessment
- implement, maintain and promote work health and safety (WHS), quality and other compliance requirements and conduct audits
- work under the general direction of laboratory or quality managers, or scientific/medical personnel.

They may also undertake a range of complex technical tasks. For example:

- conduct a wide range of complex and specialised tests
- exercise considerable analytical skills and judgement to determine appropriate methods and procedures from a range of alternatives
- modify methods to cope with non-routine tests and analyses where unusual samples could be involved and/or where the instrumental controls require optimisation
- develop or adapt methods and procedures.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

## **Entry Requirements**

Entrants must have been awarded a Diploma of Laboratory Technology or be able to demonstrate equivalent competency, and have had an appropriate period of relevant employment at an occupational level commensurate with the Diploma of Laboratory Technology.

## Packaging Rules

To be awarded the MSL60116 Advanced Diploma of Laboratory Operations competency must be achieved in a total of **thirteen (13)** units of competency, consisting of:

- **seven (7)** core units of competency
- **six (6)** elective units of competency.

**Note:** Units marked with an asterisk have one or more prerequisite requirements and must be considered in the total number of units. Please refer to individual units for details.

### Core units of competency

Select all **seven (7)** of the following units of competency.

Unit code	Unit title
MSL916001	Develop and maintain laboratory documentation
MSL916002	Manage and develop teams
MSL916003	Supervise laboratory operations in work/functional area
MSL916004	Maintain registration and statutory or legal compliance in work/functional area
MSL936001	Maintain quality system and continuous improvement processes within work/functional area
MSL946001	Implement and monitor WHS and environmental management systems
MSMENV472	Implement and monitor environmentally sustainable work practices

### ELECTIVE UNITS

Select **six (6)** elective units of competency from Groups A and B, as specified below:

- a minimum of **three (3)** units must be chosen from Group A
- the remainder may be chosen from Groups A and B, to bring the total number of electives to **six (6)**.

Note that **three (3)** of the elective may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at

Advanced Diploma level.		
<b>Group A Elective units</b>		
<b>Unit code</b>	<b>Unit title</b>	<b>Prerequisites</b>
MSL916005	Manage complex projects	
MSL936002	Conduct an internal audit of the quality system	
MSL976002	Prepare plans and quality assurance procedures for environmental field activities	*
MSL976003	Evaluate and select appropriate test methods and/or procedures	
MSL977001	Contribute to the development of products and applications	*
MSL977002	Troubleshoot equipment and/or production processes	
MSL977003	Contribute to the validation of test methods	*
MSL977004	Develop or adapt analyses and procedures	*
MSAENV672B	Develop workplace policy and procedures for sustainability	
<b>Group B Elective units</b>		
<b>Unit code</b>	<b>Unit title</b>	<b>Prerequisites</b>
MSL904001	Perform standard calibrations	
MSL905001	Perform non-standard calibrations	*
MSL905002	Create or modify calibration procedures	*
MSL905003	Create or modify automated calibration procedures	*
MSL915001	Provide information to customers	
MSL915002	Schedule laboratory work for a small team	
MSL924001	Process and interpret data	

MSL925001	Analyse data and report results	*
MSL925002	Analyse measurements and estimate uncertainties	*
MSL935001	Monitor the quality of test results and data	*
MSL935002	Assist in the maintenance of reference materials	
MSL935003	Authorise the issue of test results	*
MSL935004	Maintain instruments and equipment	
MSL953002	Operate a robotic sample preparation system	
MSL954001	Obtain representative samples in accordance with sampling plan	
MSL954002	Prepare mineral samples for analysis	
MSL955001	Supervise a robotic sample preparation system	*
MSL963001	Operate basic handblowing equipment	
MSL963002	Repair glass apparatus using simple glassblowing equipment	*
MSL965001	Design and manufacture glass apparatus and glass systems	*
MSL965002	Perform glass coating, grinding and finishing operations	*
MSL965003	Construct, modify and maintain high vacuum systems	*
MSL973004	Perform aseptic techniques	
MSL973007	Perform microscopic examination	
MSL973009	Conduct field-based acceptance tests for construction materials	
MSL973010	Conduct laboratory-based acceptance tests for construction materials	
MSL973010	Conduct laboratory-based acceptance tests for construction materials	
MSL973011	Perform fire pouring techniques	
MSL974002	Conduct geotechnical site investigations	
MSL974003	Perform chemical tests or procedures	

MSL974004	Perform food tests	
MSL974005	Perform physical tests	
MSL974006	Perform biological procedures	
MSL974007	Undertake environmental field-based monitoring	
MSL974010	Perform mechanical tests	
MSL974012	Perform tests to determine the properties of construction materials	*
MSL974014	Classify soils	*
MSL975001	Perform microbiological tests	*
MSL975002	Perform haematological tests	*
MSL975003	Perform histological tests	*
MSL975004	Perform chemical pathology tests	*
MSL975005	Conduct sensory analysis	
MSL975006	Perform immunohaematological tests	*
MSL975007	Supervise sampling, inspections and testing at construction sites	*
MSL975008	Apply electrophoretic techniques	*
MSL975009	Apply routine chromatographic techniques	*
MSL975010	Perform fire assay techniques	*
MSL975011	Design and supervise complex environmental field surveys	*
MSL975012	Provide input to production trials	*
MSL975013	Perform tissue and cell culture techniques	*
MSL975014	Perform molecular biology tests and procedures	*
MSL975015	Prepare animal and plant material for display	
MSL975016	Perform complex tests to measure engineering properties of materials	*



MSL975017	Perform laboratory-based ecological techniques	*
MSL975018	Perform complex tests to measure chemical properties of materials	*
MSL975019	Apply complex instrumental techniques	*
MSL975020	Apply routine spectrometric techniques	*
MSL975021	Apply routine electrometric techniques	*
MSL975022	Perform food analyses	*
MSL975023	Supervise geotechnical site investigations	*
MSL975024	Locate record and collect forensic samples	
MSL975025	Perform complex laboratory testing of forensic samples	
MSL975026	Perform physical examination of forensic samples	
MSL975027	Classify building sites	*

## Qualification Mapping Information

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## Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>