Australian Government

MSL50116 Diploma of Laboratory Technology

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

MSL50116 Diploma of Laboratory Technology

Modification History

Release 1. Supersedes and is equivalent to MSL50109 Diploma of Laboratory Technology

Qualification Description

This qualification covers the skills and knowledge required to apply a range of laboratory technologies to conduct scientific-technical tests and sampling in most industry sectors.

Employment outcomes targeted by this qualification include technical officers, laboratory technicians, analysts and similar personnel.

Technical officers conduct a wide range of sampling and testing that requires the application of broad scientific-technical knowledge and skills, with substantial depth in some areas. Although technical officers generally work in a laboratory, they often work closely with personnel in other teams within a section of the workplace.

They may liaise with suppliers to troubleshoot product non-conformance at the direction of laboratory supervisors or managers. They gather information on non-conformance and events that may lead to the modification of workplace procedures. They may also demonstrate methods to others and train them to collect samples and conduct basic tests reliably.

The work of technical officers involves frequent peak periods and interruptions. They:

- work according to established procedures in a structured environment
- collect and prepare samples and communicate sample requirements to other personnel
- conduct a wide range of routine and specialised tests where atypical samples may be involved and the instrumentation used has a wide range of operating variables
- contribute to the modification of standard operating procedures (SOPs) and enterprise methods when necessary
- define and solve problems where alternatives are not obvious and where investigations and trials may be required and the implications of various solutions considered
- work under the direction and supervision of senior technical staff, laboratory or quality managers, or scientific/medical professionals
- generally work as part of a team and may have a role in the planning of schedules and monitoring of resources in their work area.

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

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded the MSL50116 Diploma of Laboratory Technology competency must be achieved in a total of **twenty-one (21)** units of competency, consisting of:

- **nine (9)** core units of competency
- **twelve (12)** 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 **nine (9) of the following** units of competency.

Unit code	Unit title	Prerequisites
MSL913001	Communicate with other people	
MSL913002	Plan and conduct laboratory/field work	
MSL915001	Provide information to customers	
MSL924001	Process and interpret data	
MSL924002	Use laboratory application software	
MSL925001	Analyse data and report results	*
MSL934002	Apply quality system and continuous improvement processes	
MSL944001	Maintain laboratory/field workplace safety	
MSMENV472	Implement and monitor environmentally sustainable work practices	

ELECTIVE UNITS

Select **twelve (12)** elective units from Groups A, B, C and D as specified below:

- a minimum of **five (5)** units must be selected from Group A
- the remainder may be chosen from Groups A, B, C and D, with a maximum of **three (3)** units from Group B, a maximum of **five (5)** units from Group C and a maximum of **two (2)** units from Group D, to bring the total electives to **twelve (12)**.

Note that **four (4)** of the elective units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Diploma.

Group A Elective units

Unit code	Unit title	Prerequisites
MSL905001	Perform non-standard calibrations	*
MSL905002	Create or modify calibration procedures	*
MSL905003	Create or modify automated calibration procedures	*
MSL915002	Schedule laboratory work for a small team	
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	
MSL955001	Supervise a robotic sample preparation system	*
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	*
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	*

Group B Elective units

Unit code	**Unit title**	**Prerequisites**
MSL933001	Maintain the laboratory/field workplace fit for purpose	
MSL933003	Apply critical control point requirements	
MSL933004	Perform calibration checks on equipment and assist with its maintenance	
MSL943001	Work safely with instruments that emit ionising radiation	
MSL943002	Participate in laboratory/field workplace safety	
MSL953001	Receive and prepare samples for testing	
MSL953002	Operate a robotic sample preparation system	
MSL963001	Operate basic handblowing equipment	
MSL963002	Repair glass apparatus using simple glassblowing equipment	*
MSL973001	Perform basic tests	
MSL973002	Prepare working solutions	
MSL973003	Prepare culture media	
MSL973004	Perform aseptic techniques	
MSL973005	Assist with fieldwork	
MSL973006	Prepare trial batches for evaluation	
MSL973007	Perform microscopic examination	

MSL973008	Perform histological procedures	
MSL973009	Conduct field-based acceptance tests for construction materials	
MSL973010	Conduct laboratory-based acceptance tests for construction materials	
MSL973011	Perform fire pouring techniques	
MSL973012	Perform site investigation activities	
HLTPAT317C	Operate effectively within a pathology testing environment	
TAEDEL301A	Provide work skill instruction	

Group C Elective units

Unit code	**Unit title**	**Prerequisites**
MSL904001	Perform standard calibrations	
MSL914001	Prepare practical science classes and demonstrations	
MSL934001	Contribute to the ongoing development of HACCP plans	
MSL934003	Maintain and control stocks	
MSL954001	Obtain representative samples in accordance with sampling plan	
MSL954002	Prepare mineral samples for analysis	
MSL974001	Prepare, standardise and use solutions	
MSL974002	Conduct geotechnical site investigations	
MSL974003	Perform chemical tests and procedures	
MSL974004	Perform food tests	
MSL974005	Perform physical tests	

MSL974006	Perform biological procedures	
MSL974007	Undertake environmental field-based monitoring	
MSL974008	Capture and manage scientific images	
MSL974009	Undertake field-based, remote-sensing monitoring	
MSL974010	Perform mechanical tests	
MSL974011	Prepare tissue and cell cultures	*
MSL974012	Perform tests to determine the properties of construction materials	*
MSL974013	Monitor performance of structures	*
MSL974014	Classify soils	*
MSL974015	Operate an automated mineral analysis system	
HLTPAT419C	Perform pathology tests	

Group D Elective units

Unit code	**Unit title**	**Prerequisites**
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	
MSL916005	Manage complex projects	
MSL936001	Maintain quality system and continuous improvement processes within work/functional area	

MSL936002	Conduct an internal audit of the quality system	
MSL946001	Implement and monitor OHS and environmental management systems	
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	

Qualification Mapping Information

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Links

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