Australian Government

MSL50122 Diploma of Laboratory Technology

Release: 1

MSL50122 Diploma of Laboratory Technology

Modification History

Release 1. Supersedes and equivalent to MSL50118 Diploma of Laboratory Technology (Release 4). Total number of units increased by three. MSL925006 Analyse data and report results moved from core to elective. Some missing prerequisite units added. Elective units added, including MSL units and imported units from the Food, Beverage and Pharmaceutical Training Package.

Qualification Description

This qualification reflects the role of workers who apply a range of laboratory technologies to conduct scientific-technical tests in most industry sectors, utilising specialist technical knowledge. They conduct a wide range of routine and complex, specialised tests where atypical samples may be involved and the instrumentation used has a wide range of operating variables. Workers communicate sample requirements to other personnel and may liaise with suppliers to troubleshoot product non-conformance. They may also demonstrate methods to others and train team members to collect samples and conduct basic tests reliably.

Workers contribute to the modification of standard operating procedures (SOPs) and enterprise methods when necessary and they may also have a role in the planning of schedules and monitoring of resources in their work area. Work is carried out according to established procedures, often under the management of laboratory or quality managers, or scientific/medical professionals.

No licensing, legislative or certification requirements exist at the time of publication.

Entry Requirements

Entry to this qualification is open to individuals who:

- hold a Certificate IV in Laboratory Techniques

OR

- hold a Certificate IV or higher-level qualification in a science, technology, engineering or mathematics (STEM) discipline

OR

- can provide evidence of technical laboratory skills, knowledge and employment experience.

Packaging Rules

Total number of units = 18

- 5 core units
- 13 elective units, consisting of:

- at least 7 units from any of the elective lists below, including at least 5 units coded at 5000 or above
- 6 additional units from any of the elective lists below, any endorsed Training Package or accredited course – these units must be relevant to the work outcome.

Any combination of electives that meets the rules above can be selected for the award of the *MSL50122 Diploma of Laboratory Technology*. Where appropriate, electives may be packaged to provide a qualification with a specialisation.

Packaging for each specialisation**:**

- At least 6 Group A electives must be selected for award of *Diploma of Laboratory Technology (Pathology)*
- At least 6 Group B electives must be selected for award of the *Diploma of Laboratory Technology (Chemistry)*
- At least 6 Group C electives must be selected for award of the *Diploma of Laboratory Technology (Construction*)
- At least 6 Group D electives must be selected for award of the *Diploma of Laboratory Technology (Food*)
- At least 6 Group E electives must be selected for award of the *Diploma of Laboratory Technology (Biotechnology)*.

CORE UNITS

Unit code	**Unit title**	**Prerequisites**
MSL924005	Process and interpret data	
MSL924006	Use laboratory application software	
MSL934008	Maintain instruments and equipment	
MSL934009	Apply quality system and continuous improvement processes	
MSL935008	Monitor the quality of test results and data	MSL924005 Process and interpret data MSL934009 Apply quality system and continuous improvement processes

ELECTIVE UNITS

Group A – Pathology specialisation

Unit code	**Unit title**	**Prerequisites**
MSL954006	Relate anatomical and physiological features to laboratory samples	
MSL974034	Perform biological procedures	
MSL975056	Perform advanced histological techniques	MSL975057 Perform

Unit code	Unit title	Prerequisites
		histological tests
MSL975057	Perform histological tests	MSL973028 Perform microscopic examination MSL954006 Relate anatomical and physiological features to laboratory samples
MSL975058	Perform immunohaematological tests	
MSL975060	Perform tissue or cell culture techniques	MSL973027 Perform techniques that prevent cross-contamination
MSL975061	Perform molecular biology tests and procedures	MSL973027 Perform techniques that prevent cross-contamination MSL974034 Perform biological procedures
MSL975062	Perform microbiological tests	MSL973027 Perform techniques that prevent cross-contamination MSL973028 Perform microscopic examination
MSL975063	Perform haematological tests	MSL973028 Perform microscopic examination
MSL975064	Perform chemical pathology tests	MSL974034 Perform biological procedures

Group B – Chemistry specialisation

Unit code	Unit title	Prerequisites
MSL925005	Analyse measurements and estimate uncertainties	MSL924005 Process and interpret data MSL925006 Analyse data and report results
MSL935006	Assist in the maintenance of reference materials	
MSL974032	Perform chemical tests and procedures	
MSL975066	Apply routine chromatographic techniques	MSL974032 Perform chemical tests and procedures
MSL975067	Perform complex tests to measure chemical properties of materials	MSL974032 Perform chemical tests and procedures

Unit code	Unit title	Prerequisites
MSL975068	Apply complex instrumental techniques	MSL974032 Perform chemical tests and procedures
MSL975069	Apply routine spectrometric techniques	MSL974032 Perform chemical tests and procedures
MSL975070	Apply routine electrometric techniques	MSL974032 Perform chemical tests and procedures

Group C – Construction specialisation

Unit code	Unit title	Prerequisites
MSL925005	Analyse measurements and estimate uncertainties	MSL924005 Process and interpret data MSL925006 Analyse data and report results
MSL954007	Obtain representative samples in accordance with sampling plan	
MSL974016	Perform physical and mechanical tests	
MSL974018	Conduct geotechnical site investigations	
MSL974026	Perform tests to determine the properties of construction materials	MSL973022 Conduct laboratory-based acceptance tests for construction materials
MSL974028	Classify soils	MSL973021 Conduct field-based acceptance tests for construction materials MSL973022 Conduct laboratory-based acceptance tests for construction materials
MSL975059	Supervise sampling, inspections and testing at construction sites	MSL954007 Obtain representative samples in accordance with sampling plan MSL973021 Conduct field based acceptance tests for construction materials
MSL975044	Perform complex tests to measure engineering properties of materials	MSL973022 Conduct laboratory-based

Unit code	Unit title	Prerequisites
		acceptance tests for construction materials MSL974026 Perform tests to determine the properties of construction materials
MSL975051	Supervise geotechnical site investigations	MSL974018 Conduct geotechnical site investigations
MSL975055	Classify building sites	MSL974028 Classify soils
RIISTD401	Monitor quarry laboratory operations and the quality of results	

Group D – Food specialisation

Unit Code	Unit Title	Prerequisites
FBPFST4004	Perform microbiological procedures in the food industry	
FBPFST5005	Examine the biochemical properties of food	
FBPFSY3003	Monitor the implementation of food safety and quality programs	
MSL974032	Perform chemical tests and procedures	
MSL974033	Perform food tests	
MSL975032	Provide input to production trials	
MSL975038	Conduct sensory analysis	
MSL975066	Apply routine chromatographic techniques	MSL974032 Perform chemical tests and procedures
MSL975069	Apply routine spectrometric techniques	MSL974032 Perform chemical tests and procedures
MSL975071	Perform food analyses	MSL974033 Perform food tests

Group E – Biotechnology specialisation

Unit Code	Unit Title	Prerequisites
MSL974032	Perform chemical tests and procedures	
MSL975060	Perform tissue or cell culture techniques	MSL973027 Perform techniques that prevent cross-contamination
MSL975061	Perform molecular biology tests and procedures	MSL973027 Perform techniques that prevent cross-contamination MSL974034 Perform biological procedures
MSL975062	Perform microbiological tests	MSL973027 Perform techniques that prevent cross-contamination MSL973028 Perform microscopic examination
MSL975065	Apply electrophoretic techniques	MSL974032 Perform chemical tests and procedures
MSL975066	Apply routine chromatographic techniques	MSL974032 Perform chemical tests and procedures
MSL975069	Apply routine spectrometric techniques	MSL974032 Perform chemical tests and procedures

Other electives

Unit Code	Unit Title	Prerequisites
FBPFSY5001	Develop a HACCP-based food safety plan	
MSL904003	Perform standard calibrations	
MSL905004	Perform non-standard calibrations	MSL904003 Perform standard calibrations
MSL905005	Create or modify calibration procedures	MSL905004 Perform non-standard calibrations
MSL915003	Provide information to customers	
MSL915004	Schedule laboratory work for a small team	

Unit Code	Unit Title	Prerequisites
MSL916011	Develop and maintain laboratory documentation	
MSL916012	Manage and develop teams	
MSL916013	Supervise laboratory operations in work or functional area	
MSL916014	Maintain compliance in work or functional area	
MSL916015	Manage complex projects	
MSL925006	Analyse data and report results	MSL924005 Process and interpret data
MSL935005	Authorise the issue of test results	MSL925006 Analyse data and report results
MSL935006	Assist in the maintenance of reference materials	
MSL973027	Perform techniques that prevent cross-contamination	
MSL973028	Perform microscopic examination	
MSL973021	Conduct field-based acceptance tests for construction materials	
MSL973022	Conduct laboratory-based acceptance tests for construction materials	
MSL973023	Perform fire pouring techniques	
MSL974022	Undertake environmental field-based monitoring	
MSL974037	Triage and allocate tissue specimens	
MSL974038	Use techniques to complete simple tissue specimen transfers	
MSL975041	Perform fire assay techniques	MSL973023 Perform fire pouring techniques
MSL975042	Design and supervise complex environmental field surveys	MSL974022 Undertake environmental field-based monitoring

Unit Code	Unit Title	Prerequisites
MSL975043	Prepare animal and plant material for display	
MSL975052	Locate, record and collect forensic samples	
MSL975072	Use surgical cut techniques for non-complex tissue specimens	MSL974038 Use techniques to complete simple tissue specimen transfers MSL954006 Relate anatomical and physiological features to laboratory samples
MSMENV472	Implement and monitor environmentally sustainable work practices	
MSL974036	Process body fluid specimens using a point of care testing device	

Qualification Mapping Information

Supersedes and equivalent to MSL50118 Diploma of Laboratory Technology.

Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet – - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa