

## National Higher Qualifications

For

*Laboratory Operations*



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## SECTION 1 – PACKAGE BACKGROUND

### Background to the Laboratory Operations Training Package

The Laboratory Operations Training Package (MSL09) addresses the training and recognition needs of samplers, testers and laboratory personnel working in a wide range of enterprises and industry sectors including:

- process manufacturing
- construction materials testing
- food and beverage processing
- biotechnology, biomedical research, pathology testing
- environmental monitoring and technology
- mining, mineral assay
- calibration
- chemical, forensic, environmental analysis
- education.

The most appropriate ANZCO Classifications are:

- Major Class 3. Technicians and Trades Workers
- 311 Agricultural, Medical and Science Technicians
- 312 Building and Engineering Technicians
- 399 Miscellaneous Technicians and Trades Workers
- Class 2 Professionals.
- 234 Natural and Physical Science Professionals

However, these ANZCO classifications do not cover all relevant workers (eg. scientific glass blowers, samplers and testers).

#### PML99

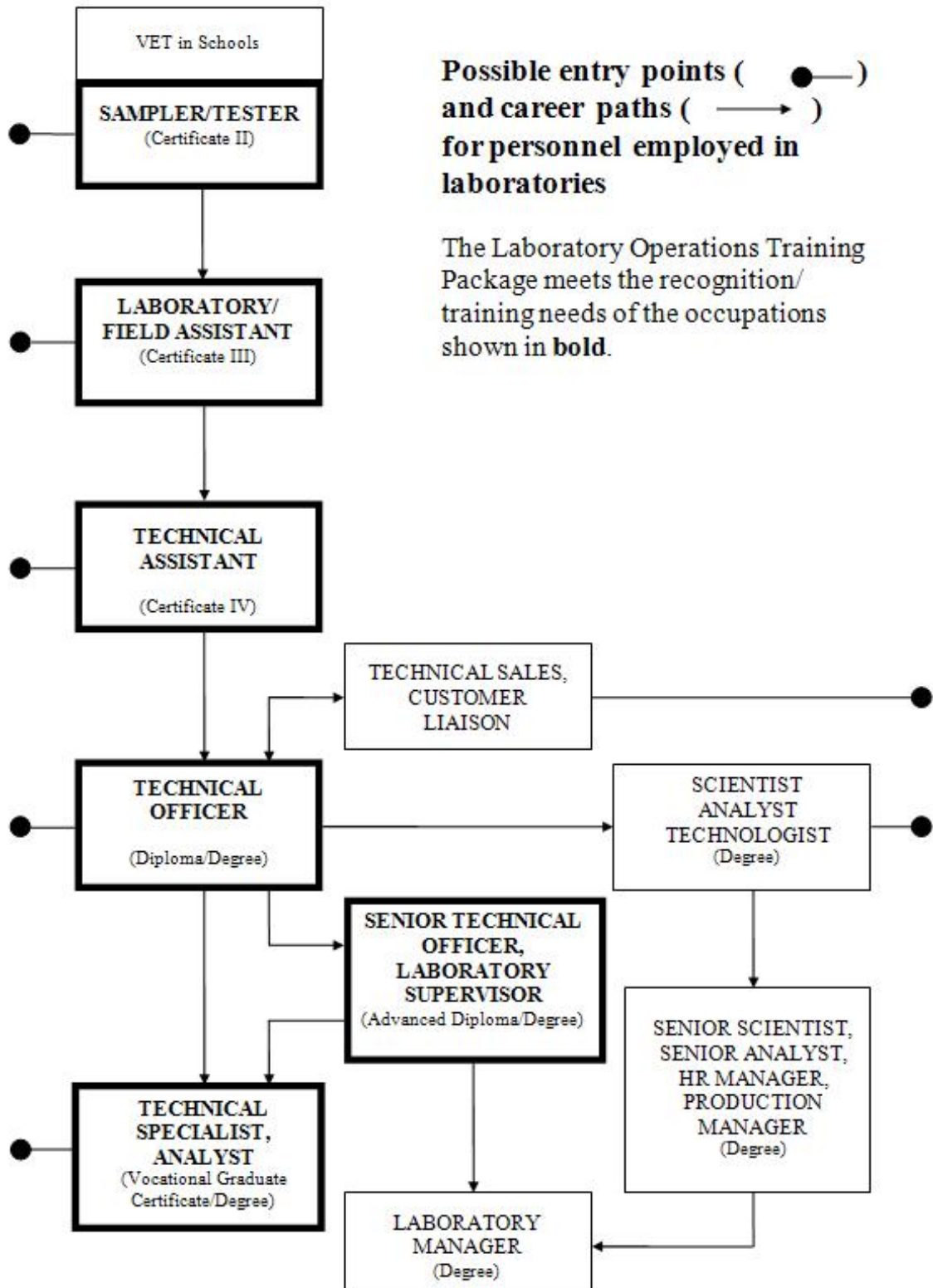
The Laboratory Operations Training Package, which was initially endorsed in 1999, has been the principal vehicle for addressing the emerging training and education needs of the people involved in these occupations.

PML99 was developed by Manufacturing Learning Australia with funding provided by the Australian National Training Authority (ANTA). A consulting team led by the Centre for Training, Assessment and Development, Canberra Institute of Technology (CIT), undertook the development of the endorsed components.

Initially, this Training Package was designed to cater for laboratory and testing activities in the manufacturing, biomedical and food processing industries. In 2000, coverage was subsequently expanded to include construction materials testing and scientific glassblowing.

#### PML04

In October 2002 it was determined that PML99 should be expanded to cover biotechnology, mineral assaying, specialist calibration technicians and laboratory technicians in educational institutions, and that a Certificate II should be developed to cover the needs of personnel working in manufacturing and field based sampling and/or testing. The pace of change in knowledge and skills requirements in these occupations has been a significant driver for the expansion and redevelopment of PML99.



## SECTION 2 – MSL20109 Certificate II in Sampling and Measurement

This qualification covers the skills and knowledge required to perform a range of sampling and measurement as part of laboratory, production or field operations in the construction, manufacturing, resources and environmental industry sectors.

The Certificate II in Sampling and Measurement offers entry level training for sampling and measurement skills applied across a range of industries. Employment outcomes targeted by this qualification include samplers and testers, production personnel, plant operators, production operators, field assistants, drivers

Samplers and testers conduct limited sampling and testing as part of their duties in their particular industry

### Packaging Rules

To be awarded a **Certificate II in Sampling and Measurement** competency must be achieved in a total of **eight (8)** units of competency, consisting of:

- **four (4)** core units of competency
- **four (4)** elective units of competency.

#### Core units of competency

Select all **four (4)** units of competency from this group.

Unit code	Unit title	Prerequisites
MSAENV272B	Participate in environmentally sustainable work practices	
MSL912001A	Work within a laboratory/field workplace (induction)	
MSL922001A	Record and present data	
MSL943002A	Participate in laboratory/field workplace safety	

#### Elective units of competency

Select **four (4)** elective units from Groups A and B as specified below:

- a minimum of **two (2)** 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 **four (4)**.

Note that **two (2)** of the elective units may be chosen from this Training Package, other endorsed Training Packages and accredited courses

#### Group A

Unit code	Unit title	Prerequisites
MSL952001A	Collect routine site samples	
MSL952002A	Handle and transport samples or equipment	

MSL972001A	Conduct routine site measurements	
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**Group B**

Unit code	Unit title	Prerequisites
MSL913001A	Communicate with other people	
MSL913002A	Plan and conduct laboratory/field work	
MSL933001A	Maintain the laboratory/field workplace fit for purpose	
MSL933002A	Contribute to the achievement of quality objectives	
MSL933003A	Apply critical control point requirements	
MSL933004A	Perform calibration checks on equipment and assist with its maintenance	
MSL943001A	Work safely with instruments that emit ionising radiation	
MSL953001A	Receive and prepare samples for testing	
MSL953002A	Operate a robotic sample preparation system	
MSL963001A	Operate basic handblowing equipment	
MSL963002A	Repair glass apparatus using simple glassblowing equipment	MSL963001A
MSL973001A	Perform basic tests	
MSL973002A	Prepare working solutions	
MSL973003A	Prepare culture media	
MSL973004A	Perform aseptic techniques	
MSL973005A	Assist with fieldwork	
MSL973006A	Prepare trial batches for evaluation	
MSL973007A	Perform microscopic examination	
MSL973008A	Perform histological procedures	
MSL973009A	Conduct field-based acceptance tests for construction materials	
MSL973010A	Conduct laboratory-based acceptance tests for construction materials	
MSL973011A	Perform fire pouring techniques	
MSL973012A	Assist with geotechnical site investigations	

## SECTION 3 – MSL30109 Certificate III in Laboratory Skills

This qualification covers the skills and knowledge required to perform a limited range of laboratory operations across all industry sectors.

The Certificate III in Laboratory Skills offers entry level technical training in laboratory skills across a range of industries. Employment outcomes targeted by this qualification include laboratory technicians, instrument operators and similar personnel.

Laboratory technicians perform straightforward laboratory work. They follow set procedures and recipes, and apply well developed technical skills and basic scientific knowledge. They generally work inside a laboratory but may also perform technical tasks in the field or within production plants. They may also perform a range of laboratory maintenance and office tasks.

The majority of their work involves a predictable flow of parallel or similar tasks within one scientific discipline. They:

- perform straightforward technical tasks to prepare and test samples using relevant procedures, Australian standards and readily available advice. These tasks generally require close attention to detail and to the accuracy and precision of measurements. They may require the use of manual or semi-automated techniques
- operate test equipment and instruments and make limited adjustments to their

### Packaging Rules

To be awarded a Certificate III in Laboratory Skills, competency must be achieved in a total of **thirteen (13)** units of competency, consisting of

- **six (6)** core units
- **seven (7)** elective units from Groups A and B, chosen as specified below.

Units listed under **core** are considered essential for all laboratory assistants. The units of competency listed as **electives** may only apply to some personnel according to the size and scope of the particular enterprise and laboratory. Select **all six (6)** units of competency from this list.

Unit code	Unit title	Prerequisites
MSAENV272B	Participate in environmentally sustainable work practices	
MSL913001A	Communicate with other people	
MSL913002A	Plan and conduct laboratory/field work	
MSL922001A	Record and present data	
MSL933002A	Contribute to the achievement of quality objectives	

MSL943002A	Participate in laboratory/field workplace safety	
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### Elective Units

Select **seven (7)** elective units from Groups A and B, as below:

- a minimum of **four (4)** 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 **seven (7)**.

Note that **two (2)** of the electives units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Certificate III.

#### Group A

Unit code	Unit title	Prerequisites
MSL933001A	Maintain the laboratory/field workplace fit for purpose	
MSL933003A	Apply critical control point requirements	
MSL933004A	Perform calibration checks on equipment and assist with its maintenance	
MSL943001A	Work safely with instruments that emit ionising radiation	
MSL953001A	Receive and prepare samples for testing	
MSL953002A	Operate a robotic sample preparation system	
MSL963001A	Operate basic handblowing equipment	
MSL963002A	Repair glass apparatus using simple glassblowing equipment	MSL963001A
MSL973001A	Perform basic tests	
MSL973002A	Prepare working solutions	
MSL973003A	Prepare culture media	
MSL973004A	Perform aseptic techniques	
MSL973005A	Assist with fieldwork	
MSL973006A	Prepare trial batches for evaluation	
MSL973007A	Perform microscopic examination	
MSL973008A	Perform histological procedures	

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MSL973009A	Conduct field-based acceptance tests for construction materials	
MSL973010A	Conduct laboratory-based acceptance tests for construction materials	
MSL973011A	Perform fire pouring techniques	
MSL973012A	Assist with geotechnical site investigations	
HLTPAT317A	Operate effectively within a pathology testing environment	
TAADEL301C	Provide training through instruction and demonstration of work skills	

**Group B**

Unit code	Unit title	Prerequisites
MSL912001A	Work within a laboratory/field workplace (induction)	
MSL952001A	Collect routine site samples	
MSL952002A	Handle and transport samples or equipment	
MSL972001A	Conduct routine site measurements	
MSL904001A	Perform standard calibrations	
MSL914001A	Prepare practical science classes and demonstrations	
MSL924001A	Process and interpret data	
MSL924002A	Use laboratory application software	
MSL934001A	Contribute to the ongoing development of HACCP plans	
MSL934002A	Apply quality system and continuous improvement processes	
MSL934003A	Maintain and control stocks	
MSL944001A	Maintain laboratory/field workplace safety	
MSL954001A	Obtain representative samples in accordance with sampling plan	
MSL954002A	Prepare mineral samples for analysis	
MSL974001A	Prepare, standardise and use solutions	
MSL974002A	Conduct geotechnical site investigations	MSL973012A

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MSL974003A	Perform chemical tests and procedures	
MSL974004A	Perform food tests	
MSL974005A	Perform physical tests	
MSL974006A	Perform biological procedures	MSL973004A, MSL973007A
MSL974007A	Undertake environmental field-based monitoring	
MSL974008A	Capture and manage scientific images	
MSL974009A	Undertake field-based, remote-sensing monitoring	
MSL974010A	Perform mechanical tests	
MSL974011A	Prepare tissue and cell cultures	MSL973004A
MSL974012A	Perform tests to determine the properties of construction materials	MSL973001A OR MSL973010A
MSL974013A	Monitor performance of structures	MSL973009A
MSAENV472B	Implement and monitor environmentally sustainable work practices	
HLTPAT419A	Perform pathology tests	HLTPAT317A

## SECTION 4 – MSL40109 Certificate IV in Laboratory Techniques

This qualification covers the skills and knowledge required to perform a range of laboratory techniques to conduct tests and sampling in a variety of industry sectors.

The Certificate IV in Laboratory Techniques offers technical training in laboratory techniques across a range of industries. Employment outcomes targeted by this qualification include laboratory technicians, instrument operators and similar personnel.

Laboratory technicians undertake a wide range of sampling and testing that requires the application of a broad range of technical skills and some scientific knowledge. Although laboratory technicians generally work in a laboratory, they often work closely with other personnel throughout the workplace and with suppliers. They may assist other personnel to solve technical problems and to adjust formulations and production mixes. They may also train them to collect samples and conduct basic tests reliably.

The work of laboratory technicians involves similar tasks within one scientific discipline with occasional peak periods and some interruptions. They may:

- work according to established procedures in a structured environment
- collect and prepare samples
- conduct a wide range of basic tests and a limited range of specialised tests and measurements using manual, semi-automated and fully automated techniques

### Packaging Rules

To be awarded a Certificate IV in Laboratory Techniques competency must be achieved in a total of **seventeen (17)** units of competency, consisting of:

- **six (6)** core units of competency
- **eleven (11)** elective units of competency.

### Core units of competency

Select **all six (6)** units of competency listed below

Unit code	Unit title	Prerequisites
MSAENV272B	Participate in environmentally sustainable work practices	
MSL913001A	Communicate with other people	
MSL913002A	Plan and conduct laboratory/field work	
MSL924001A	Process and interpret data	

MSL934002A	Apply quality system and continuous improvement processes	
MSL943002A	Participate in laboratory/field workplace safety	

### Elective units of competency

Select **eleven (11)** elective units from Groups A, B and C as specified below:

- a minimum of **five (5)** units must be selected from Group A
- the remainder may be chosen from Groups A, B and C, with a maximum of **four (4)** from Group B and a maximum of **three (3)** from Group C, to bring the total number of electives to **eleven (11)**.

Unit code	Unit title	Prerequisites
MSL904001A	Perform standard calibrations	
MSL914001A	Prepare practical science classes and demonstrations	
MSL924002A	Use laboratory application software	
MSL934001A	Contribute to the ongoing development of HACCP plans	
MSL934003A	Maintain and control stocks	
MSL944001A	Maintain laboratory/field workplace safety	
MSL954001A	Obtain representative samples in accordance with sampling plan	
MSL954002A	Prepare mineral samples for analysis	
MSL974001A	Prepare, standardise and use solutions	
MSL974002A	Conduct geotechnical site investigations	MSL973012A
MSL974003A	Perform chemical tests and procedures	
MSL974004A	Perform food tests	

MSL974005A	Perform physical tests	
MSL974006A	Perform biological procedures	MSL973004A,
MSL974007A	Undertake environmental field-based monitoring	
MSL974008A	Capture and manage scientific images	
MSL974009A	Undertake field-based, remote-sensing monitoring	
MSL974010A	Perform mechanical tests	
MSL974011A	Prepare tissue and cell cultures	MSL973004A

MSL974012A	Perform tests to determine the properties of construction materials	MSL973001A
MSL974013A	Monitor performance of structures	MSL973009A
MSAENV472B	Implement and monitor environmentally sustainable work practices	
HLTPAT419A	Perform pathology tests	HLTPAT317A

**Group B**

Unit code	Unit title	
MSL933001A	Maintain the laboratory/field workplace fit for purpose	
MSL933002A	Contribute to the achievement of quality objectives	
MSL933003A	Apply critical control point requirements	
MSL933004A	Perform calibration checks on equipment and assist with its maintenance	
MSL943001A	Work safely with instruments that emit ionising radiation	
MSL953001A	Receive and prepare samples for testing	
MSL953002A	Operate a robotic sample preparation system	
MSL963001A	Operate basic handblowing equipment	
MSL963002A	Repair glass apparatus using simple glassblowing equipment	MSL963001A
MSL973001A	Perform basic tests	
MSL973002A	Prepare working solutions	

MSL973003A	Prepare culture media	
MSL973004A	Perform aseptic techniques	
MSL973005A	Assist with fieldwork	
MSL973006A	Prepare trial batches for evaluation	
MSL973007A	Perform microscopic examination	
MSL973008A	Perform histological procedures	
MSL973009A	Conduct field-based acceptance tests for construction materials	
MSL973010A	Conduct laboratory-based acceptance tests for construction materials	

MSL973011A	Perform fire pouring techniques	
MSL973012A	Assist with geotechnical investigations	
TAADEL301C	Provide training through instruction and demonstration of work skills	
HLTPAT317A	Operate effectively within a pathology testing environment	

**Group C**

Unit code	Unit title
MSL905001A	Perform non-standard calibrations
MSL905002A	Create or modify calibration procedures
MSL905003A	Create or modify automated calibration procedures
MSL915001A	Provide information to customers
MSL915002A	Schedule laboratory work for a small team
MSL925001A	Analyse data and report results
MSL925002A	Analyse measurements and estimate uncertainties
MSL935001A	Monitor the quality of test results and data
MSL935002A	Assist in the maintenance of reference materials
MSL935003A	Authorise the issue of test results

MSL935004A	Maintain instruments and equipment
MSL955001A	Supervise a robotic sample preparation system
MSL965001A	Design and manufacture glass apparatus and glass systems
MSL965002A	Perform glass coating, grinding and finishing operations
MSL965003A	Construct, modify and maintain high vacuum systems
MSL975001A	Perform microbiological tests
MSL975002A	Perform haematological tests

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MSL975003A	Perform histological tests
MSL975004A	Perform chemical pathology tests
MSL975005A	Conduct sensory analysis
MSL975006A	Perform immunohaematological tests
MSL975007A	Supervise sampling, inspections and testing at construction sites
MSL975008A	Apply electrophoretic techniques
MSL975009A	Apply routine chromatographic techniques

MSL975010A	Perform fire assay techniques
MSL975011A	Design and supervise complex environmental field surveys
MSL975012A	Provide input to production trials
MSL975013A	Perform tissue and cell culture techniques
MSL975014A	Perform molecular biology tests and procedures
MSL975015A	Prepare animal and plant material for display
MSL975016A	Perform complex tests to measure engineering properties of materials
MSL975017A	Perform laboratory-based ecological techniques
MSL975018A	Perform complex tests to measure chemical properties of materials
MSL975019A	Apply complex instrumental techniques
MSL975020A	Apply routine spectrometric techniques
MSL975021A	Apply routine electrometric techniques
MSL975022A	Perform food analyses
MSL975023A	Supervise geotechnical site investigations

## **SECTION 5 – MSL50109 Diploma of Laboratory Technology**

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.

The Diploma of Laboratory Technology offers broad or specialised technical training in a range of laboratory technologies. Employment outcomes targeted by this qualification include technical officers, laboratory technicians, analysts and similar personnel.

Laboratory technicians 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 laboratory technicians 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 laboratory technicians involves frequent peak periods and interruptions. They may:

- 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
- work as part of a team and may have a role in the planning of schedules and monitoring of resources in their work area.

## Packaging Rules

To be awarded a 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.

### Core units of competency

Select **all nine (9)** units of competency listed below.

Unit code	Unit title	
MSAENV472B	Implement and monitor environmentally sustainable work practices	
MSL913001A	Communicate with other people	
MSL913002A	Plan and conduct laboratory/field work	
MSL915001A	Provide information to customers	
MSL924001A	Process and interpret data	
MSL924002A	Use laboratory application software	
MSL925001A	Analyse data and report results	MSL924001A
MSL934002A	Apply quality system and continuous improvement processes	
MSL944001A	Maintain laboratory/field workplace safety	

### Elective units of competency

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**,

### Group A

Unit code	Unit title
MSL905001A	Perform non-standard calibrations
MSL905002A	Create or modify calibration procedures

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MSL905003A	Create or modify automated calibration procedures
MSL915002A	Schedule laboratory work for a small team
MSL925002A	Analyse measurements and estimate uncertainties
MSL935001A	Monitor the quality of test results and data
MSL935002A	Assist in the maintenance of reference materials
MSL935003A	Authorise the issue of test results
MSL935004A	Maintain instruments and equipment
MSL955001A	Supervise a robotic sample preparation system
MSL965001A	Design and manufacture glass apparatus and glass systems
MSL965002A	Perform glass coating, grinding and finishing operations
MSL965003A	Construct, modify and maintain high vacuum systems
MSL975001A	Perform microbiological tests
MSL975002A	Perform haematological tests
MSL975003A	Perform histological tests
MSL975004A	Perform chemical pathology tests
MSL975005A	Conduct sensory analysis
MSL975006A	Perform immuno-haematological tests
MSL975007A	Supervise sampling, inspections and testing at construction sites
MSL975008A	Apply electrophoretic techniques
MSL975009A	Apply routine chromatographic techniques
MSL975010A	Perform fire assay techniques
MSL975011A	Design and supervise complex environmental field surveys
MSL975012A	Provide input to production trials
MSL975013A	Perform tissue and cell culture techniques
MSL975014A	Perform molecular biology tests and procedures

MSL975015A	Prepare animal and plant material for display
MSL975016A	Perform complex tests to measure engineering properties of materials
MSL975017A	Perform laboratory-based ecological techniques
MSL975018A	Perform complex tests to measure chemical properties of materials
MSL975019A	Apply complex instrumental techniques
MSL975020A	Apply routine spectrometric techniques
MSL975021A	Apply routine electrometric techniques
MSL975022A	Perform food analyses
MSL975023A	Supervise geotechnical site investigations

**Group B**

Unit code	Unit title
MSL933001A	Maintain the laboratory/field workplace fit for purpose
MSL933002A	Contribute to the achievement of quality objectives
MSL933003A	Apply critical control point requirements
MSL933004A	Perform calibration checks on equipment and assist with its maintenance
MSL943001A	Work safely with instruments that emit ionising radiation
MSL953001A	Receive and prepare samples for testing
MSL953002A	Operate a robotic sample preparation system
MSL963001A	Operate basic handblowing equipment
MSL963002A	Repair glass apparatus using simple glassblowing equipment
MSL973001A	Perform basic tests
MSL973002A	Prepare working solutions
MSL973003A	Prepare culture media
MSL973004A	Perform aseptic techniques
MSL973005A	Assist with fieldwork
MSL973006A	Prepare trial batches for evaluation

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MSL973007A	Perform microscopic examination
MSL973008A	Perform histological procedures
MSL973009A	Conduct field-based acceptance tests for construction materials
MSL973010A	Conduct laboratory-based acceptance tests for construction materials
MSL973011A	Perform fire pouring techniques
MSL973012A	Assist with geotechnical site investigations
HLTPAT317A	Operate effectively within a pathology testing environment

**Group C**

Unit code	Unit title
MSL904001A	Perform standard calibrations
MSL914001A	Prepare practical science classes and demonstrations
MSL934001A	Contribute to the ongoing development of HACCP plans
MSL934003A	Maintain and control stocks
MSL954001A	Obtain representative samples in accordance with sampling plan
MSL954002A	Prepare mineral samples for analysis
MSL974001A	Prepare, standardise and use solutions
MSL974002A	Conduct geotechnical site investigations
MSL974003A	Perform chemical tests and procedures
MSL974004A	Perform food tests
MSL974005A	Perform physical tests
MSL974006A	Perform biological procedures
MSL974007A	Undertake environmental field-based monitoring
MSL974008A	Capture and manage scientific images
MSL974009A	Undertake field-based, remote-sensing monitoring
MSL974010A	Perform mechanical tests
MSL974011A	Prepare tissue and cell cultures
MSL974012A	Perform tests to determine the properties of construction materials

MSL974013A	Monitor performance of structures
HLTPAT419A	Perform pathology tests

**Group D**

MSL916001A	Develop and maintain laboratory documentation
MSL916002A	Manage and develop teams
MSL916003A	Supervise laboratory operations in work/functional area
MSL916004A	Maintain registration and statutory or legal compliance in work/functional area
MSL916005A	Manage complex projects
MSL936001A	Maintain quality system and continuous improvement processes within work/functional area
MSL936002A	Conduct an internal audit of the quality system
MSL946001A	Implement and monitor OHS and environmental management systems
MSL976001A	Classify building sites
MSL976002A	Prepare plans and quality assurance procedures for environmental field activities
MSL976003A	Evaluate and select appropriate test methods and/or procedures
MSL977001A	Contribute to the development of products and applications
MSL977002A	Troubleshoot equipment and/or production processes
MSL977003A	Contribute to the validation of test methods
MSL977004A	Develop or adapt analyses and procedures
MSL977005A	Integrate data acquisition and interfacing systems
MSAENV672B	Develop workplace policy and procedures for environmental sustainability

## **Section 6 - MSL60109 Advanced Diploma of Laboratory Operations**

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

The Advanced Diploma of Laboratory Operations offers training in the coordination of day-to-day laboratory operations. Employment outcomes targeted by this qualification include laboratory supervisors, laboratory technical officers and similar personnel.

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, choice of appropriate technology and procedures to ensure that products and services meet customer expectations and are provided safely and efficiently in keeping with enterprise business plan.

Laboratory technical officers apply specialist technical skills in addition to the full range of laboratory skills to specific projects with minimal supervision. Laboratory technical officers are required to apply considerable technical insight, well developed analytical skills and possess the ability to apply in-depth specialist technical knowledge to determine methods of approach from a range of possible alternatives.

Under broad direction from scientists/medical staff/engineers the laboratory technical officer/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 the full range of laboratory skills to individual projects and services associated with the work area
- explain instructions and procedures to others
- 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 OHS, quality and other compliance requirements and conduct audits

## Packaging Rules

To be awarded an 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.

### Core units of competency

Select all **seven (7)** units of competency listed below.

Unit code	Unit title	Prerequisites
MSAENV472B	Implement and monitor environmentally sustainable work practices	
MSL916001A	Develop and maintain laboratory documentation	
MSL916002A	Manage and develop teams	
MSL916003A	Supervise laboratory operations in work/functional area	
MSL916004A	Maintain registration and statutory or legal compliance in work/functional area	
MSL936001A	Maintain quality system and continuous improvement processes within work/functional area	
MSL946001A	Implement and monitor OHS and environmental management systems	

### Elective units of competency

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)**.

#### Group A

Unit code	Unit title
MSL916005A	Manage complex projects
MSL936002A	Conduct an internal audit of the quality system
MSL976001A	Classify building sites

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MSL976002A	Prepare plans and quality assurance procedures for environmental field activities
MSL976003A	Evaluate and select appropriate test methods and/or procedures
MSL977001A	Contribute to the development of products and applications
MSL977002A	Troubleshoot equipment and/or production processes
MSL977003A	Contribute to the validation of test methods
MSL977004A	Develop or adapt analyses and procedures
MSL977005A	Integrate data acquisition and interfacing systems
MSAENV672B	Develop workplace policy and procedures for environmental sustainability

**Group B**

MSL905001A	Perform non-standard calibrations
MSL905002A	Create or modify calibration procedures
MSL905003A	Create or modify automated calibration procedures
MSL915001A	Provide information to customers
MSL915002A	Schedule laboratory work for a small team
MSL925001A	Analyse data and report results
MSL925002A	Analyse measurements and estimate uncertainties
MSL935001A	Monitor the quality of test results and data
MSL935002A	Assist in the maintenance of reference materials
MSL935003A	Authorise the issue of test results
MSL935004A	Maintain instruments and equipment
MSL955001A	Supervise a robotic sample preparation system
MSL965001A	Design and manufacture glass apparatus and glass systems
MSL965002A	Perform glass coating, grinding and finishing operations
MSL965003A	Construct, modify and maintain high vacuum systems
MSL975001A	Perform microbiological tests
MSL975002A	Perform haematological tests

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MSL975003A	Perform histological tests
MSL975004A	Perform chemical pathology tests
MSL975005A	Conduct sensory analysis
MSL975006A	Perform immuno-haematological tests
MSL975007A	Supervise sampling, inspections and testing at construction sites
MSL975008A	Apply electrophoretic techniques
MSL975009A	Apply routine chromatographic techniques
MSL975010A	Perform fire assay techniques
MSL975011A	Design and supervise complex environmental field surveys
MSL975012A	Provide input to production trials
MSL975013A	Perform tissue and cell culture techniques
MSL975014A	Perform molecular biology tests and procedures
MSL975015A	Prepare animal and plant material for display
MSL975016A	Perform complex tests to measure engineering properties of materials
MSL975017A	Perform laboratory-based ecological techniques
MSL975018A	Perform complex tests to measure chemical properties of materials
MSL975019A	Apply complex instrumental techniques
MSL975020A	Apply routine spectrometric techniques
MSL975021A	Apply routine electrometric techniques
MSL975022A	Perform food analyses
MSL975023A	Supervise geotechnical site investigations