PART A – SkillsPoint Product Information

Master Product Information

**RTO Code:** **90003**

**Training Product Code:** **MSL40118**

**Release no.** **1**

**Training Product Name:** **Certificate IV in Laboratory Techniques**

**Status of Training Product:** Current

**Release Date:** **20/07/2018**

**Category of Product:**  Nationally Recognised Qualification

Accredited Course

Skill Set

Statement of Attainment

Non Nationally Recognised

**SkillsPoint Details**

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**Contact Details: adam.samuelson@tafensw.edu.au**

**SkillsPoint Project Identifier: MRS\_18\_07\_MSL40118-CHEM**

Master Delivery Information

**Specialist Stream or Industry Identified Stream contained in this TAS:**

**Chemistry Industry Specialisation**

**Target Student Group Category:**  Pre-employment

Apprentices/Trainees

International Students

Existing Workers

Other (Please specify):

**Mode(s) of Delivery:**  Face to Face Learning

Workplace Training

Online Learning

Blended

Other:

Contents

[PART A – SkillsPoint Product Information 1](#_Toc18012313)

[Master Product Information 1](#_Toc18012314)

[Master Delivery Information 1](#_Toc18012315)

[1. Training Product Overview 3](#_Toc18012316)

[1.1 Training Product Requirements 3](#_Toc18012317)

[1.2 Licensing and/or Regulatory Requirements 3](#_Toc18012318)

[1.3 Qualification Description 3](#_Toc18012319)

[1.4 Pathways 3](#_Toc18012320)

[1.5 Entry Requirements 4](#_Toc18012321)

[1.6 Exit Points 4](#_Toc18012322)

[1.7 Units of Competency 5](#_Toc18012323)

[1.8 Imported Units 6](#_Toc18012324)

[2. Additional Information 7](#_Toc18012325)

[2.1 Environment and Location 7](#_Toc18012326)

[2.2 Language, Literacy and Numeracy 8](#_Toc18012327)

[2.3 Recognition Processes 8](#_Toc18012328)

[2.4 Educational and Support Services 8](#_Toc18012329)

[2.5 WHS Risk Ranking 9](#_Toc18012330)

[2.6 Physical and Learning Resources 10](#_Toc18012331)

[2.7 Industry Engagement 14](#_Toc18012332)

[3. Transition Arrangements 30](#_Toc18012333)

[4. Structure, Delivery and Assessment 30](#_Toc18012334)

[4.1 Volume of Learning 30](#_Toc18012335)

[4.2 Delivery Strategy 31](#_Toc18012336)

[4.3 Assessment 35](#_Toc18012337)

[5. Master TAS Approval 38](#_Toc18012338)

[PART B – Delivery TAS Information 39](#_Toc18012339)

[6. Delivery Details 39](#_Toc18012340)

[6.1 Entry Requirements 39](#_Toc18012341)

[6.2 Additional Student Support at Delivery Location 39](#_Toc18012342)

[6.3 Contextualisation 40](#_Toc18012343)

[7. Third Party Arrangements 40](#_Toc18012344)

[8. Staff Qualifications and Industry Experience 41](#_Toc18012345)

[9. Additional Industry/Community Engagement 43](#_Toc18012346)

[10. Assessment Validation 44](#_Toc18012347)

[10.1 Validation of assessment judgements 44](#_Toc18012348)

[11. Delivery TAS Approval 45](#_Toc18012349)

1. Training Product Overview

### 1.1 Training Product Requirements

**Link to Training Product on**[TGA](http://www.training.gov.au/)**:** **<https://training.gov.au/Training/Details/MSL40118>**

**Number of Core Units:**  **5**

**Number of Elective Units: 10**

**Total Number of Units: 15**

**Packaging Rules:**

Total number of units = 15

-5 core units

-10 elective units, consisting of:

-at least 7 units from the electives listed below

-up to 3 units from any endorsed Training Package or accredited course – these units must be relevant to the work outcome.

### 1.2 Licensing and/or Regulatory Requirements

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

### 1.3 Qualification Description

This qualification reflects the role of workers who perform a range of laboratory techniques, including manual, semi-automated and fully automated, to collect and prepare samples in a laboratory. They conduct a wide range of basic, and limited range of specialist tests across a variety of industry sectors. Workers may be required to 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.

Workers have responsibility for their own outputs according to established procedures. Work is carried out according to established procedures often under the direction and supervision of laboratory or quality managers, or scientific/medical professionals. Work is normally subject to frequent progress and quality checks.

### 1.4 Pathways

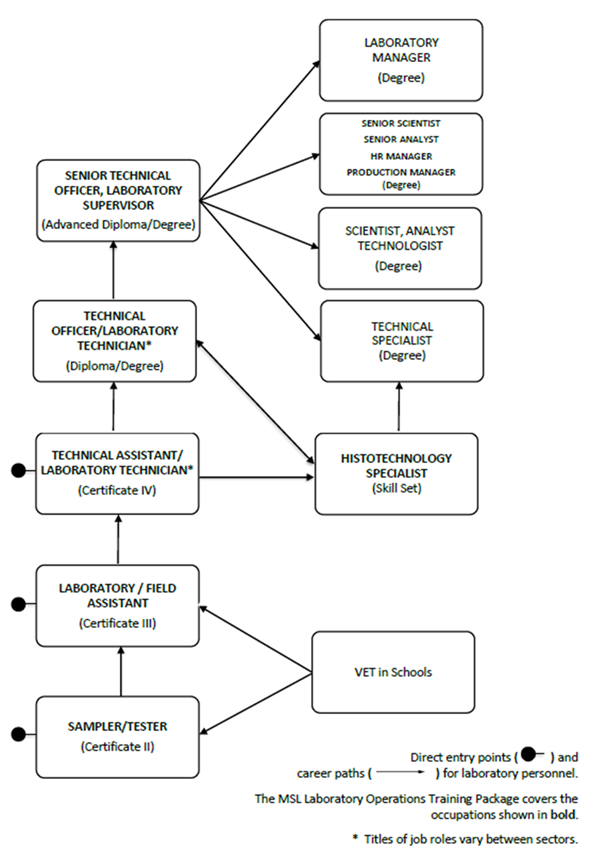
**Study Pathways**

The study pathways available to students who undertake this Specialist Stream or Industry Identified Stream include:

Further training pathways from this qualification include MSL50118 Diploma of Laboratory Technology.

**Employment Pathways**

The employment pathways available to students who complete this Specialist Stream or Industry Identified Stream include:



### 1.5 Entry Requirements

The following **Training Package** entry requirements exist for this course:

There are no entry requirements for this qualification.

### 1.6 Exit Points

A Statement of Attainment will be issued for any unit of competency successfully completed if the full qualification is not completed.

### 1.7 Units of Competency

Consistent with the qualification packaging rules, the units listed below will be delivered and assessed for this training product:

#### Core Units

Table 1 Core Units

| **No.** | **Unit Code and Unit Title** | **Unit Type and Additional Notes** |
| --- | --- | --- |
| **1** | MSL924003 - Process and interpret data | Core |
| **2** | MSL934004 - Maintain and calibrate instruments and equipment | Core |
| **3** | MSL934006 - Apply quality system and continuous improvement processes | Core |
| **4** | MSL944002 - Maintain laboratory or field workplace safety | Core |
| **5** | MSL953003 - Receive and prepare samples for testing | Core |

#### Elective Units

Table 2 Elective Units

| **No.** | **Unit Code and Unit Title** | **Unit Type and Additional Notes** | **Packaging Rules**  *(Grouping, Hours and Points, where applicable)* |
| --- | --- | --- | --- |
| **6** | MSL924004 - Use laboratory application software | Elective |  |
| **7** | MSL974020 - Perform food tests | Elective |  |
| **8** | MSL974019 - Perform chemical tests and procedures | Elective |  |
| **9** | MSL904002 - Perform standard calibrations | Elective |  |
| **10** | MSL974017 - Prepare, standardise and use solutions | Elective |  |
| **11** | MSL954004 - Obtain representative samples in accordance with a sampling plan | Elective |  |
| **12** | MSL975040 - Apply routine chromatographic techniques\* | Elective - Pre-requisite  MSL974019 Perform chemical tests and procedures |  |

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### 1.8 Imported Units

Details of electives imported from another Training Package or accredited course.

Table 4 Imported Electives

| **No.** | **Unit Code** a**nd Unit Title** | **Release version #** | **Status** | **Release Date** | **SkillsPoint** |
| --- | --- | --- | --- | --- | --- |
| **13** | MSL933008 - Perform calibration checks on equipment and assist with its maintenance | 1 | Current | 20/07/2018 | Innovative Manufacturing, Robotics and Science [IMRS] |
| **14** | MSL973013 - Perform basic tests | 1 | Current | 20/07/2018 | Innovative Manufacturing, Robotics and Science [IMRS] |
| **15** | MSL973014 - Prepare working solutions | 1 | Current | 20/07/2018 | Innovative Manufacturing, Robotics and Science [IMRS] |

2. Additional Information

### 2.1 Environment and Location

The **simulated** work environment will be achieved by:

TAFE NSW will integrate teaching and learning strategies, in some cases bringing together a number of units that reflect real industry outcomes, to provide a framework for industry-relevant learning. In order to meet the requirements of this training product, the 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.

The simulated work environment at TAFE NSW will include practical application in both standard and specialised laboratories with access to appropriate laboratory instruments, equipment, personal protective equipment (PPE), containment facilities, materials, manuals, workplace documentation and procedures. The use of industry specific samples, case studies, sample requests, timeframes and progressive workflows will facilitate realistic workplace conditions. The program will be delivered and assessed through tasks that will simulate specific industry environments.

Compliance with industry safety requirements is supported through the provision of PPE, Australian Standards and codes of practice, Standard Operating Procedures (SOPs), risk assessments and the legal, ethical and work health and safety (WHS) requirements specific to the work task.

There are a series of defined activities that a team of participants and individuals may achieve in a simulated work environment which is reflective of the practical application of skills in the workplace. These include:

\* Practical tasks

\* Group work

\* Simulated laboratory environment activities including instructor led demonstration of practical tasks using competency dedicated instruments and equipment, followed by student practice.

\* Classroom activities including role plays, research and questioning and discussion.

The ‘Equipment to student’ ratio will vary depending on many factors including the cost of the equipment. In some cases the ratio is 1:1 for simple items such as pH meters, yet where expensive equipment is required, there may only be one item per class. In these cases, it is intended that students gain access to equipment via ‘round-robin’ timetabling so that each student gets access to all relevant equipment. This is no different to industry practice where laboratories have one piece of expensive equipment, which is very common.

**Work placement** will be achieved by:

**Detail:**

Nil

**Eligibility for work placement:**

Nil

**Total Work Placement Hours:** 0

### 2.2 Language, Literacy and Numeracy

Based on the Australian Core Skills Framework ([ACSF](https://www.education.gov.au/download-acsf)), please indicate which performance levels students are expected to be at the commencement of the course for each of the core skills listed in the table below.

For assistance in determining the LLN level of performance please consult with your relevant Learning Support Services.

Table 4 Language, Literacy and Numeracy

| **Level of Performance** | **PL1A&B** | **1** | **2** | **3** | **4** | **5** |
| --- | --- | --- | --- | --- | --- | --- |
| **Learning** |  |  |  |  |  |  |
| **Reading** |  |  |  |  |  |  |
| **Writing** |  |  |  |  |  |  |
| **Numeracy** |  |  |  |  |  |  |
| **Oral communication** |  |  |  |  |  |  |

### 2.3 Recognition Processes

#### Recognition of Prior Learning

Students are able to have their competency from prior learning and work experience recognised in this qualification through the following arrangements.

* Evidence of completing formal training
* Work experience: on the job experience and informal training
* Life experience: community group involvement, family activities, sports, hobbies, leisure activities, unpaid work, organising events, and/or travel.

Applications for RPL will be assessed on an individual basis and may be granted when a portfolio of evidence is assessed in accordance with TAFE NSW Recognition Policy and Procedures and the student is deemed competent for the unit/s of competency for which the application applies. Alternatively, the student may nominate to undertake a challenge assessment for the opportunity to demonstrate competency.

**Credit Transfer**

Students may also apply for credit transfer upon enrolment. The same or equivalent units of competency previously completed through an Australian RTO may be credited towards the new qualification they enrol into.

### 2.4 Educational and Support Services

TAFE NSW provides the following services to ensure a supported and successful learning environment for all students:

* Aboriginal and/or Torres Strait Islander Student Support and Services
* Accessibility and Disability Services
* Personal Counselling
* Vocational Counselling
* Learning Support
* International Student Support
* Scholarships
* Multicultural Support

Detailed current information on these Support Services are made available to staff and students at [TAFE NSW Student Services](http://www.tafensw.edu.au/support). Additionally every student is supported by a dedicated Student Services team at each campus location.

### 2.5 WHS Risk Ranking

Consult the WHS risk register for this course

This Training Product has the following WHS risk ranking High risk

Refer to the TAFE NSW Enterprise [Risk Management Policy](https://staff.tafensw.edu.au/documents/2017/11/enterprise-risk-management-policy.pdf/) for more details

### 2.6 Physical and Learning Resources

Specifically, the physical and learning resources listed below are required for the delivery and assessment of this Specialist Stream or Industry Identified Stream for this training product:

Table 5 Physical and Learning Resources

| Type | Resource Requirements |
| --- | --- |
| Facilities | TAFE NSW will provide the following as suitable facilities, including:  - a standard laboratory, or,  - a standard transfusion/immune-haematology laboratory with relevant equipment,  - a molecular biology laboratory  -a standard microbiology laboratory  - a standard haematology laboratory  -a computer room (or other access to computers e.g. library services or in the laboratory)  Facilities will include a classroom with computers with relevant software installed for online learning, internet access, desks, chairs, white/chalk board and projector capabilities. |
| Equipment | **MSL924003 Process and interpret data**  Access is required to the use of suitable facilities, equipment and resources, including data sets and records, a calculator, spreadsheets, computer software, databases and statistical packages, computer and relevant software or laboratory information system as well as relevant workplace procedures.  **MSL934004 Maintain and calibrate instruments and equipment**  Access is required to the use of suitable facilities, equipment and resources, including standard laboratory equipped with appropriate instruments and equipment, reference materials, consumables; cleaning, decontamination and/or disinfection agents and equipment; and personal protective equipment (PPE) as well as workplace procedures, calibration and maintenance schedules, equipment manuals, supplier catalogues and information/records management system.  **MSL934006 Apply quality system and continuous improvement processes**  Access is required to the use of suitable facilities, equipment and resources, including workplace quality manual and procedures, quality control data/records as well as customer complaints and rectifications.  **MSL944002 Maintain laboratory or field workplace safety**  Access is required to the use of suitable facilities, equipment and resources, including typical laboratory/field work equipment and materials, PPE and other safety equipment as well as workplace WHS documentation, management system, policies and procedures.  **MSL953003 Receive and prepare samples for testing**  Access is required to the use of suitable facilities, equipment and resources, including a laboratory information management system (LIMS) system (or simulated to reflect an actual LIMS), and workplace procedures covering the receipt and preparation of samples for testing, sample containers, tubes, request forms and sample documentation, simulated samples when authentic samples are unavailable or inappropriate.  **MSL924004 Use laboratory application software**  Access is required to the use of suitable facilities, equipment and resources, including a computer network, personal computer or laptop, software packages that cover databases, spreadsheets, statistical analysis and simple graphics output as well as input and output data.  **MSL974017 Prepare, standardise and use solutions**  Access is required to the use of suitable facilities, equipment and resources, including a standard laboratory equipped with appropriate reagents and equipment to prepare and standardise solutions, such as pH meters; balances; magnetic stirrers, water baths and hot plates; measuring cylinders, beakers, conical flasks, volumetric flasks, pipettes and burettes; filter papers and funnels; and fume cupboards, standard methods and workplace procedures as well as containers and storage facilities.  **MSL974019 Perform chemical tests and procedures**  Access is required to the use of suitable facilities, equipment and resources, including a standard laboratory equipped with appropriate sample preparation and test equipment, instruments, standards and reagents, workplace procedures and standard methods, records, including test and calibration results; equipment use, maintenance and servicing history, and faulty or unsafe equipment.  **MSL973013 Perform basic tests**  Access is required to the use of suitable facilities, equipment and resources, including a standard laboratory equipped with basic test equipment, common measuring instruments, materials, standard methods, workplace procedures as well as SDS and equipment manuals.  **MSL973014 Prepare working solutions**  Access is required to the use of suitable facilities, equipment and resources, including a standard laboratory equipped with appropriate reagents and equipment, standard methods and workplace procedures as well as containers and storage facilities.  **MSL974020 - Perform food tests**  Access is required to the use of suitable facilities, equipment and resources, including a standard laboratory equipped with test equipment, instruments, standards and materials, workplace procedures and standard methods, records, including; test and calibration results, equipment use, as well as maintenance and servicing history.  **MSL904002 - Perform standard calibrations**  Access is required to the use of suitable facilities, equipment and resources, including specialised calibration/test equipment, reference standards and laboratory facilities, calibration methods, procedures and equipment specifications as well as workplace quality manual and procedures.  **MSL954004 - Obtain representative samples in accordance with sampling plan**  Access is required to the use of suitable facilities, equipment and resources, including source material, a variety of sample types, sampling plans and procedures, sampling containers and sampling equipment, and sample preparation materials and equipment.  **MSL975040 - Apply routine chromatographic techniques**  Access is required to the use of suitable facilities, equipment and resources, including a standard laboratory equipped with routine chromatographic equipment, laboratory reagents and equipment as well as standard operating procedures (SOPs) and test methods.  **MSL933008 - Perform calibration checks on equipment and assist with its maintenance**  Access is required to the use of suitable facilities, equipment and resources, including standard laboratory equipped with appropriate equipment and reference materials; cleaning, decontamination and/or disinfection agents and equipment; and personal protective equipment (PPE), workplace procedures, equipment manuals and information/records management system. |
| Trainer and Assessor Qualifications and Industry Experience | The following minimum requirements have been identified for trainers and assessors;  \* Minimum qualification of MSL40118 - Certificate IV in Laboratory Techniques or equivalent.  \* Evidence of maintaining relevant and current industry professional development including ongoing exposure and development to maintain currency of industry skills.  TAE40116 Certificate IV in Training and Assessment or its successor or  TAE40110 Certificate IV in Training and Assessment plus the following units:  TAELLN411 (or its successor) or TAELLN401A, and  TAEASS502 (or its successor) or TAEASS502A or TAEASS502B or  A diploma or higher level qualification in adult education.  \* Evidence of maintaining Training and Assessment Qualifications and Professional Development, including ongoing development in current training and assessment practice. |
| Learning Resources | Each unit to have a set of comprehensive unit notes, class activities, practical task with relevant drawings and instructions, teaching and learning resources, assessments and RPL documents which will be available on the Learning Bank. Supporting resources such as policies, procedures, management plans will be available on the Learning Bank and through a Simulated Organisation developed by TAFE Digital.  Online teaching and learning and assessment capabilities. Software packages such as Laboratory Information Management Systems (LIMS, simulated or real), Microsoft Word, and Microsoft Excel are all available on classroom computers.  Access to library services including books, E-Books, industry journals and magazines, on-line data base specific to trade profile. Access to trade relevant multimedia learning materials. Access to policies and procedures, WHS legislation, regulations and codes of practice, Australian Standards, manufacturer instructions, industry legislation, forms and templates such as checklists, hazard reports, quality assurance, work plans and the like. |

### 2.7 Industry Engagement

Training and assessment practices must be relevant to the needs of industry and informed by industry engagement, this may also influence resources and staff currency. Details below are of the most current engagement activities undertaken for this training product.

Table 6 SkillsPoint Engagement

| No. | Industry/Organisation | Representative Name | Contact Details  (Email/Telephone) | Date of Consultation | How did this engagement influence one or more of the following?   * Qualification/ Course / Skill set selection * Elective selection and/or sequencing * Mode of study * Training Methods * Assessment Methods * Trainer and assessor requirements * Training and assessment resources and equipment * Contextualisation |
| --- | --- | --- | --- | --- | --- |
| **1** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratories   * Personal care, household chemicals, detergents, therapeutics and cosmetic products * Oil * Pharmaceuticals * Food/agriculture * Chemicals   Analytical laboratories   * Chemical * Food * Pharmaceutical * Agricultural   Research laboratories   * Biomedical * Chemical   Other laboratories   * Food safety * Inspection and verification * Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_01  MRS\_18\_07\_MSL40118\_IER\_02  MRS\_18\_07\_MSL40118\_IER\_03  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_05  MRS\_18\_07\_MSL40118\_IER\_06  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_10  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_12  MRS\_18\_07\_MSL40118\_IER\_13  MRS\_18\_07\_MSL40118\_IER\_14  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_20  MRS\_18\_07\_MSL40118\_IER\_21  MRS\_18\_07\_MSL40118\_IER\_22  MRS\_18\_07\_MSL40118\_IER\_23  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_01  MRS\_18\_07\_MSL40118\_IER\_02  MRS\_18\_07\_MSL40118\_IER\_03  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_05  MRS\_18\_07\_MSL40118\_IER\_06  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_10  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_12  MRS\_18\_07\_MSL40118\_IER\_13  MRS\_18\_07\_MSL40118\_IER\_14  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_20  MRS\_18\_07\_MSL40118\_IER\_21  MRS\_18\_07\_MSL40118\_IER\_22  MRS\_18\_07\_MSL40118\_IER\_23  MRS\_18\_07\_MSL40118\_IER\_24 | 23/11/18  28/11/18, 9/1/19, 11/1/19  28/11/18  31/8/18, 26/10/18  29/11/18  20/12/18  26/10/18  22/2/19  21/11/18  19/11/18  31/8/18, 7/9/18  16/11/18  14/1/19  7/12/18, 19/12/18, 16/1/19  23/10/18  14/11/18  20/11/18  31/10/18  26/10/18  6/12/18  7/11/18  19/11/18  23/1/19  23/10/18 | **Qualification Selection**  Feedback was gathered from a broad cross sector of laboratory operations stakeholders, there was coverage of the following sectors; biomedical pathology, education support, agriculture and biosecurity, veterinary and plant health, pharmaceutical, therapeutics and cosmetics, food safety and quality, chemical and environmental, inspection and verification.  Stakeholders included both private and public providers, industry associations as well as a combination of diagnostic, research, analytical and manufacturing facilities. Various sources were used to gain feedback on the skills and knowledge required by the laboratory operations industry. Specific needs were identified by stakeholders through surveys, written responses, verbal feedback and described in current job advertisements.  **Feedback**  Stakeholder feedback described the skills and knowledge required for job roles and in some cases indicated the preferred qualification by name. Despite sector diversity, core skills and knowledge consistently aligned, the main differentiation was the need for specific skills and knowledge in the areas of pathology, chemistry and food testing.  Core themes identified:   * In almost all cases safety was mentioned often with an emphasis on chemical handling and waste management. * Understanding of quality management systems, quality assurance, accreditation and related standards were identified as essential. * The majority of job roles required some kind of sample reception and processing as well as data entry skills. Only one stakeholder, a public education support laboratory felt this skill was not useful, contrasted by support of the skills by a private education support facility. * The need for skills in maintaining and/or calibrating laboratory instruments/equipment was echoed by all industry sectors but emphasized by industries performing chemical testing. * The ability to multi-task, shift priorities and meet deadlines quickly was a recurring theme across all sectors. * Written and verbal communication skills were identified as important by multiple stakeholders. * The majority of stakeholders also specifically mentioned working as part of a team.   **Action**  Stakeholder feedback described the skills and knowledge required for job roles which were matched to the MSL40118 Certificate IV in Laboratory techniques (MSL Certificate IV) qualification as well as the articulated MSL50118 Diploma in Laboratory Technology (MSL Diploma) stream pathways.  The Certificate IV qualification was identified as appropriate to address the themes identified above as the following units are core:   * MSL944002 Maintain laboratory or field workplace safety * MSL934006 Apply quality system and continuous improvement processes * MSL953003 Receive and prepare samples for testing * MSL924003 Process and interpret data * MSL934004 Maintain and calibrate instruments and equipment   As skills must be demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies training and assessment should include:   * communication skills as they relate to specific unit job roles * multi-tasking, time management and may include shifting priorities * working as part of a team where required for specific job roles * use of computer application software appropriate for data entry and processing e.g. LIMS, access or excel |
| **2** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratories   * Chemicals   Analytical laboratories   * Chemical * Food * Pharmaceutical * Agricultural   Research laboratories   * Chemical   Other laboratories   * Food safety * Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | 31/8/18, 26/10/18  26/10/18  22/2/19  21/11/18  31/8/18, 7/9/18  23/10/18  14/11/18  20/11/18  31/10/18  26/10/18  23/10/18 | **Mode of study**  A range of stakeholders from a diversity of sectors indicated their preference for the mode of study.  **Feedback**  The preference for the mode of study to include face to face training was unanimous. In addition the majority of stakeholders felt that face to face at a TAFE NSW campus combined with online learning would be the best option.  A national stakeholder that provides high quality, analytical testing for the food, agricultural and environmental industries in Australia commented that ‘social media and internet are so powerful now days that it makes sense to mix online and face to face.’  **Action**  TAFE NSW is adopting a blended mode of delivery that includes online learning in combination with face to face delivery either in a simulated work environment at a TAFE NSW campus. |
| **3** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratories   * Chemicals   Analytical laboratories   * Chemical * Food * Pharmaceutical * Agricultural   Research laboratories   * Chemical   Other laboratories   * Food safety * Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | 31/8/18, 26/10/18  26/10/18  22/2/19  21/11/18  31/8/18, 7/9/18  23/10/18  14/11/18  20/11/18  31/10/18  26/10/18  23/10/18 | **Training methods**  A range of stakeholders from a diversity of sectors indicated their preferred training methods.  **Feedback:**  There was unanimous support for Face to face training. Another stakeholder stressed the importance of using multiple training methods to ensure learning is not one sided and time for questions regarding online content should be built into face to face classes and/or through online forums (anonymous).  Theory notes with images had a majority preference. In addition to face to face and written theory notes, several stakeholders indicated a preference for voice over and/or live recorded presentations, video demonstrations and online quizzes accessible on any device 24/7.  **Action**  TAFE NSW is utilising a range of training methods including a combination of written theory notes with images, face to face presentations and online resources such as video demonstrations where available.  TAFE NSW is developing theory presentations with voice over and/or live recorded presentations as well as online practice quizzes and activities with immediate feedback and multiple attempts as online learning materials and activities.  Face to face classes should include time for answering questions around online content and a forum made available for students to ask and see the responses to questions submitted electronically. The ability to submit anonymous questions will be explored for implementation.  TAFE NSW is using a blended mode of delivery that includes online learning with 24/7 access to learning materials on any device supported by face to face in class demonstrations in a simulated work environment. |
| **4** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratories   * Chemicals   Analytical laboratories   * Chemical * Food * Pharmaceutical * Agricultural   Research laboratories   * Chemical   Other laboratories   * Food safety * Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | 31/8/18, 26/10/18  26/10/18  22/2/19  21/11/18  31/8/18, 7/9/18  23/10/18  14/11/18  20/11/18  31/10/18  26/10/18  23/10/18 | **Assessment methods**  A range of stakeholders from a diversity of sectors included biomedical pathology, food safety, education support, chemical manufacturing as well as chemical, food, agricultural and pharmaceutical diagnostic and analytical services indicated their preferred assessment methods.  **Feedback:**  A range of assessment methods were identified by stakeholders including:   * observations in a simulated workplace * project based skills assessment (over time with product assessment) * theory assignment (over time with ability to research) * practical exam and theory exams (specific day/time)   A multi sector analytical services stakeholder indicated workplace simulation would be acceptable as it would be difficult to cover everything in a single commercial laboratory. They also felt that single exams do not best reflect the students overall capability and that an assignment would be more comprehensive and fairer.  **Action**  TAFE NSW will use a combination of practical observations, project based skills assessments, theory assignments and/or practical and theory exams as possible assessment methods after consideration of the assessment conditions of each unit. Where possible assessment may be conducted on the job. |
| **5** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratories   * Chemicals   Analytical laboratories   * Chemical * Food * Pharmaceutical * Agricultural   Research laboratories   * Chemical   Other laboratories   * Food safety * Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_24 | 31/8/18, 26/10/18  26/10/18  22/2/19  21/11/18  31/8/18, 7/9/18  23/10/18  14/11/18  20/11/18  31/10/18  26/10/18  23/10/18 | **Equipment**  Equipment lists were reviewed by a range of stakeholders indicated their preferred assessment methods.  **Feedback**  Although there was nothing considered missing or outdated, the requirement for data entry, sample registration and barcoding skills combined with specific mention of laboratory information management systems and the need for training in the use of laboratory application software indicated the need for access to a real or simulated laboratory information management system.  **Action**  TAFE NSW is exploring the possibility of incorporating access to a commercially available Laboratory Information Management System into all laboratory operations courses. At time of writing, this was with TAFE Legal. |
| **6** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratories   * Oil * Pharmaceuticals * Food/agriculture * Chemicals   Analytical laboratories   * Chemical * Food * Pharmaceutical * Agricultural   Research laboratories   * Chemical   Other laboratories   * Food safety * Inspection and verification * Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_01  MRS\_18\_07\_MSL40118\_IER\_02  MRS\_18\_07\_MSL40118\_IER\_03  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_05  MRS\_18\_07\_MSL40118\_IER\_06  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_12  MRS\_18\_07\_MSL40118\_IER\_13  MRS\_18\_07\_MSL40118\_IER\_14  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_20  MRS\_18\_07\_MSL40118\_IER\_21  MRS\_18\_07\_MSL40118\_IER\_22  MRS\_18\_07\_MSL40118\_IER\_23  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_01  MRS\_18\_07\_MSL40118\_IER\_02  MRS\_18\_07\_MSL40118\_IER\_03  MRS\_18\_07\_MSL40118\_IER\_04  MRS\_18\_07\_MSL40118\_IER\_05  MRS\_18\_07\_MSL40118\_IER\_06  MRS\_18\_07\_MSL40118\_IER\_07  MRS\_18\_07\_MSL40118\_IER\_08  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_12  MRS\_18\_07\_MSL40118\_IER\_13  MRS\_18\_07\_MSL40118\_IER\_14  MRS\_18\_07\_MSL40118\_IER\_15  MRS\_18\_07\_MSL40118\_IER\_16  MRS\_18\_07\_MSL40118\_IER\_17  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_19  MRS\_18\_07\_MSL40118\_IER\_20  MRS\_18\_07\_MSL40118\_IER\_21  MRS\_18\_07\_MSL40118\_IER\_22  MRS\_18\_07\_MSL40118\_IER\_23  MRS\_18\_07\_MSL40118\_IER\_24 | 23/11/18  28/11/18, 9/1/19, 11/1/19  28/11/18  31/8/18, 26/10/18  29/11/18  20/12/18  26/10/18  22/2/19  21/11/18  31/8/18, 7/9/18  16/11/18  14/1/19  7/12/18, 19/12/18, 16/1/19  23/10/18  14/11/18  20/11/18  31/10/18  26/10/18  6/12/18  7/11/18  19/11/18  23/1/19  23/10/18 | **Unit selection**  Feedback gathered from a broad range of laboratory operations stakeholders was used to identify electives that had cross sector applications. Sector coverage included; biomedical diagnostic and research pathology, education support, agriculture, veterinary, pharmaceutical, therapeutics and cosmetics goods, manufacturing, food safety and quality, chemical and environmental, inspection and verification.  **Feedback**  The need for skills in data entry, sample registration and use of laboratory information management systems and laboratory application software were recurring themes.  A cross sector national analytical services stakeholder described MSL924004 Use laboratory application software as a ‘must have’ unit. They explained that the world has evolved and almost all laboratories are operating with a Laboratory Information Management System (LIMS). Although the software platform varies the basic components are almost identical. They suggested a simulated version would acceptable in an education setting. The inclusion of this unit in the certificate IV qualification was supported by the majority of stakeholders and considered critical by a pathology industry association and several private pathology stakeholders. Only one stakeholder, a public education support laboratory felt this skill was not useful, contrasted by support of the skills by a private education support facility.  **Feedback**  Performing calculations, preparation of reagents and performing dilutions was highlighted as very important skills required in the laboratory operations industry. A chemical manufacturer and an education support laboratory stakeholder asserted that MSL973014 Prepare working solutions and MSL974017 Prepare, standardise and use solutions should be a mandatory/core units. The inclusion of these units was also supported by stakeholders across all sectors.  **Feedback**  Consultation revealed that all sectors perform basic tests in one form or another and many sectors including food, pharmaceutical, biomedical, environmental and chemical manufacturing routinely following standard operating procedures to perform chemical tests and procedures. The inclusion of MSL974019 Perform chemical tests and procedures was supported by stakeholders across the all sectors. MSL973013 Perform basic tests was supported by the chemistry industry sectors.  **Feedback**  MSL954004 Obtain representative samples in accordance with sampling plan was identified as a critical unit by a member of a food safety profession body as well as a national multi sector analytical services provider. It was explained that any analytical results without a representative homogenous sample are meaningless regardless of the quality of the test conducted. It was noted that many food samples that are currently collected are actually invalid because the person collecting them does not understand what characteristics are required for a sample to be considered representative.  Although one education support laboratory suggested this unit was not relevant in an educational setting, this was in contrast with feedback from another education support laboratory. A chemical manufacturer also identified these units as useful for medicine manufacturing under Good Manufacturing Practice (GMP) conditions.  Overall feedback from the chemical and food sectors supported the inclusion of MSL954004 Obtain representative samples in accordance with sampling plan as well as MSL974020 - Perform food tests due to the number of stakeholders in these sectors conducting food testing as part of their laboratories scope of registration.  **Feedback**  A recurring theme for the chemical industries was the need for skills and knowledge in both biology and chemistry in particular were a common trend.  **Feedback**  One of Australia’s leading manufacturers of disinfectants for healthcare and industrial cleaning products indicated MSL904002 - Perform standard calibrations is important in all laboratories operating under a quality system and suggested that the unit could be merged with MSL933008 Perform calibration checks on equipment and assist with its maintenance.   * MSL973013 - Perform basic tests and MSL973014 - Prepare working solutions was only included in the chemistry focused certificate IV qualifications as the food industry required additional food specific units that provide greater relevance to the job roles as well as providing credit pathways from the MSL30118 Certificate III in laboratory skills (MSL Certificate III) and to a food streamed MSL Diploma. * MSL954004 Obtain representative samples in accordance with sampling plan was only included in the chemistry and food focused certificate IV qualifications.   These inclusions also support credit pathways from the MSL Certificate III and to a chemistry streamed MSL Diploma. |
| **7** | Public and private employer organisations performing laboratory testing or providing education support.  Manufacturing laboratory   * Chemicals   Analytical laboratories   * Chemical * Food * Agricultural   Education support | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_24 | Please refer to Industry Engagement Record(s):  MRS\_18\_07\_MSL40118\_IER\_09  MRS\_18\_07\_MSL40118\_IER\_11  MRS\_18\_07\_MSL40118\_IER\_18  MRS\_18\_07\_MSL40118\_IER\_24 | 21/11/18  31/8/18, 7/9/18  31/10/18  23/10/18 | **Contextualisation**  Some stakeholders provided specific feedback on the content of several units from their specific industry perspective.  **Feedback**  Feedback on unit content:   * MSL944002 Maintain laboratory or field workplace safety should include:   + Biological and chemical safety and waste management   + Chemical labelling and the use of Chemwatch software   + Using Department of Education Chemical Saftey in Schools package * MSL934006 Apply quality system and continuous improvement processes should include: * Understanding laboratory accreditation systems and regulation * Linking to relevant standards and requirements including ISO 17025, ISO 15189 and GLP * The main headings from ISO 17025 * MSL973013 Perform basic tests should include   + Use of data loggers * MSL974019 Perform chemical tests and procedures should include   + spectrometric, gravimetric and volumetric (titrimetric) analysis   + tracking of obvious test malfunctions where the procedure is standardised   **Action**  TAFE NSW will contextualise the above units to include these suggestions. |

3. Transition Arrangements

When there is a change to the Training Package that impacts on this TAS, the SkillsPoint will work with Standards and Compliance teams to complete a Transition Plan and notify all staff affected as soon as possible.

TAFE NSW complies with clauses 1.26 and 1.27 of the *Standards for RTOs 2015*. When there are major changes to the Training Package, the SkillsPoint will review the changes made and create a plan to transition to the new training package requirements and cater for completion arrangements for students where possible. The progress of the transition will be implemented by the Delivery, Implementation and Performance and Skills Teams and monitored by Standards and Compliance teams.

Transition arrangements must be completed within 12 months of changes being published on training.gov.au for superseded qualifications and two years for deleted training products.

Does this qualification require the completion of a Transition Plan  Yes  No

If yes, a completed Transition Plan is attached.

4. Structure, Delivery and Assessment

### 4.1 Volume of Learning

**Volume of Learning** includes all activities required to be undertaken by the typical student to achieve learning outcomes. It is comprised of the Amount of Training + the Amount of Assessment + Unstructured Learning.

**Amount of Training** takes into consideration the existing skills, knowledge and experience of students, the mode of delivery, availability of resources and the number of units. It is the **Structured Learning** – formal learning activities, which may consist of

• Lectures or tutorials, on-line tasks and forums

• Learning activities

• Structured workplace experience

• Workshop activities

• Structured prescribed reading

• Prescribed follow-up activities

**Unstructured Learning** may include private study, assignment preparation, work experience and research.

A justification must be included for any differences between the **AQF Volume of Learning indicator** and the total hours in each instance of course delivery. Factors that may reduce volume of learning can include the number of units packaged in the qualification, student having pre-existing knowledge and skills, mode of delivery and clustering of units. For further information see [Fact Sheet - Amount of Training](https://www.asqa.gov.au/news-publications/publications/fact-sheets/amount-training).

The **AQF Volume of Learning indicator** for this product is: Certificate IV 600-2400 hours

The **Total Amount of Training Hours** for this product is: 500

The **Total Amount of Assessment Hours** for this Product is: 58

The Total Estimated **Unstructured Learning Hours** for this product are: 129

The **Total Volume of Learning** for this product is: **687**

### 4.2 Delivery Strategy

Details of the Volume of Learning for this training product are outlined below:

Table 7 Volume of Learning - Detail

| **No.** | **Delivery Mode** | **Types of Structured Learning** | **Structured Learning**  **Hours** | **Assessment Hours** | **Unstructured Learning Hours** | **Volume of Learning** |
| --- | --- | --- | --- | --- | --- | --- |
| **1** | Blended | \* Face to face learning \* Online learning (Moodle)  \* End of chapter topic tests  \* In class practice tasks  \* Group planning tasks  \* Out of class structured activities | **500** | **58** |  | **558** |
| **2** | Self-directed | \* Review of structured learning  \*Internet based research \* Assessment preparation  \* Review of topic test answers from teacher  \* Industry research and job analysis |  |  | **129** | **129** |
|  | **TOTALS** | | | | | **687** |

**Outline of Delivery Strategy and Justification for variance in Volume of Learning from the AQF Indicator:**

**Course Purpose**

The MSL40118 Certificate IV in Laboratory Techniques intends to qualify individuals who apply integrated technical and theoretical concepts in a broad range of contexts to undertake advanced skilled or paraprofessional work and as a pathway for further learning. This involves scientific practices and processes as well as following statutory structured workplace procedures. The Certificate IV in Laboratory Techniques is a non-trade (para-professional) industry endorsed course (as per IER in Table 6 above).

**Delivery sequence and structure**

Outline of Delivery Strategy and Justification for variance in Volume of Learning from the AQF Indicator:

This delivery strategy offers a total volume of learning of 687 hours. The AQF minimum volume of learning indicator is 600 – 2400 hours. Below is an outline of the delivery strategy for this offering.

**Target Student Group – Pre-employment**

This Training and Assessment Strategy has been tailored to meet the needs of students who are ‘pre-employment’ and have no existing experience working in the laboratory industry, which is considered ‘post-school’ or paraprofessional.

It is acknowledged that students entering this qualification will generally have an interest in laboratory. Students will generally have limited skills and knowledge in general science and/or chemistry prior to enrolling that been acquired at high school, through some previous study or life experience, which are deemed to be transferrable to this course.

Although the target student group are new to the laboratory industry sector, it is acknowledged they typically enter the course with some basic organisation & study skills and computing skills, gained through prior study and as a result of life experience in an increasingly technology-savvy world and the need to be able to interact using these technologies as a part of day-to-day life.

Class sizes will have a nominal student to teacher ratio **on average** of 15:1 based on available resources in the classroom environment.

**Volume of learning**

The volume of learning is determined based on target student group described above in ‘Target Student Group – Pre-employment’.

The training provided to students is based on the principles of Andragogy, and will acknowledge students existing skills, knowledge and experience and where possible will scaffold any learning outcomes based on these, as well as significant industry consultation.

This amount of training and assessment has been determined to ensure all students with an LLN level described under section 2.2 of this TAS document, can successfully complete each unit of competency delivered with minimal, or no need for additional support.

In this delivery strategy, the unit delivery flows in a logical sequence to ensure that initial concepts are learnt and applied which ensure that the appropriate underpinning knowledge and skills are learnt for later units. The unit delivery is in line with semester delivery to ensure adequate time and logical flow. Elective units have been chosen based on industry feedback to ensure the best outcomes and job readiness for graduate.

Course sequence ensures that all pre-requisite material is learnt prior to more senior units ensuring that students learn in the logical sequence the units were intended to be taught in.

Elective units have been chosen to cover the requisite Competence Fields from the Training Package to ensure that the integrity of the industry specialisation has been adhered to. Units have also been sequenced in the intended order of the Training Package to ensure that the Training package rules have been met as stringently as possible.

Furthermore, graduate outcomes meet minimum industry requirements and expectation, achieved through real world tasks and processes from relevant government departments where appropriate/applicable.

**Description of Structured learning and assessment**

Blended - Structured learning & assessment: in-class

This course duration is three (3) terms (27 weeks at 20.7 hours per week or three days a week).

Students will attend 558 hours (20.7 hrs per week x 27 weeks) of face-to-face classes over the duration of this course. Within face-to-face classes students will complete 500 hours of structured learning and 58 hours of assessment.

\*\*For specific structured learning and assessment hours for each unit, please refer to ‘Table 8 Delivery and Assessment Schedule’.

Timetabled classes will include face-to-face and online instructional sessions, demonstrations, role plays, group activities, individual tasks, practical and theory classes, projects, videos, brainstorming, and application of learning from the directed learning tasks and out of class activities.

The facilities provided by TAFE NSW provide students access to simulated work environment and the equipment required to gain a real-world experience of laboratory services that will align with their job role. The simulated environments include practical tasks in field (if required) and laboratory environments both on and off campus as well as computer labs.

Timetabled classes will also include assessments tasks that require assessor observation of supervised timed assessments, practical tasks, role plays, simulated workplace activities, project work and knowledge based assessments. All assessment occurs as specified in the assessment event instructions. Assessments will utilise on-campus resources and facilities to assess students in simulated workplace environments. Assessment methods reflect the most suitable means for assessing the required skills, providing students with the best opportunity to demonstrate their competence.

Learning resources are provided to students such as handouts, student learner workbook, unit outlines and assessment guides, which we be made available on the Learning Bank or Simulated Organisation website as required.

Out-of-class structured learning will include directed activities such as, pre-readings for timetabled classes, completing student workbook activities, practical tasks, participation in group work and forums, viewing of prescribed videos, researching specific information relating to the unit of competency and any homework of tasks set by, and monitored by the teacher.

Self-directed - Unstructured learning

This delivery strategy requires all learners to engage in 129 hours of self-paced study, research, assessment preparation, and review of class topics and practice at home or on campus. Unstructured learning is essential for learners to continue to develop a broad understanding of Laboratory concepts and application of Laboratory skills throughout the course and achieve competency.

Trainers and assessors will progressively engage students during the course through active class discussion, individual mentoring and training and assessment feedback to monitor student engagement and unstructured learning. Online resources are also available for students to engage with during unstructured learning, such as a course Moodle, accounts for Lynda.com tutorials, and studiosity.com tutorial support. This will be monitored through LMS logging time stamps.

**Volume of learning variance justification**

The Volume of Learning for this Training Product is 687 Hours. This is within the range for the AQF Indicator at Certificate IV level, however it may be noted that:

**1) This course is non-trade (para-professional)**

The unit choice is heavily industry focused which means there is a reduced amount of learning required as there is a lower diversity of topics to learn.

**2) Cohort Industry Background VoL reduction = 0%.**

Not applicable.

**3) Cohort Education background VoL reduction = 0%**

Not applicable.

**4) Entry LLN Levels Required = 15%**

The expected entry level LLN requirements for this course in line with ACSF sums to 15% reduction in VoL due to ACSF scores of 3 as entry level requirements for **Learning**, **Reading** and **Writing**, **Oral communication** and **Numeracy** skills due to the scientific nature of the course.

**5) Cohort Age Group VoL reduction = 4%**

The historical enrolment data shows the typical cohort age range is 18-34. This cohort range brings more current skills and knowledge than younger cohorts, yet not as many life skills as older cohorts. The Volume of Learning provided calculates the VoL reduction at 4% for this cohort.

**6) Qualification Licensing/Registration requirements VoL reduction = 2%**

There are no licensing requirements for this course resulting in an approximate reduction in VoL of 2%

**7) Qualification UoC’s Quantity VoL reduction = 2%**

The total number of total units (15), is equal to the median number of units across all courses, as per the VoL calculator provided.

**8) Course structure of training VoL reduction = 2%**

Although clustering can optimise learning outcomes, this course has not opted for clustering due to industry requests that certain topics be strengthened such as Communication and Planning skills. To ensure that industry needs and expectations are met regarding student outcomes, all units will be delivered as standalone units without clustering. This applies to all AQF levels within the MSL training package.

**9) Course mode of delivery VoL reduction = 6%**

The Volume of Learning calculator provided scores the Course mode of delivery as a 6% reduction in VoL based on a mix of Face-to-Face and Online (Blended).

**This results in an overall reduction in the Volume of Learning = 31%**

**VoL reduction in hours = 828**

**Learning hours required = 372**

**Course VoL = 687**

### 4.3 Assessment

*Table 8* below provides a description of the sequencing of units throughout the program. It also outlines the delivery strategy, the mode (face to face, online, workplace, etc.), the hours of training and assessment required and the assessment methodology.

#### Assessment Method Legend

The assessment methods used for this training product are as follows:

**Sk Skills** (role play scenario, presentation, practical, observation)

**Kn Knowledge** (multiple choice, true or false, short answer questions)

**Pro Project** (report, research based project, journal, essay)

**CS Case study** (case study scenario, reflection)

**TLB Training Log Book**

**Prt Portfolio** (samples of work in a workplace environment)

**O Other** (add description)

#### Delivery and Assessment

Table 8 Delivery and Assessment Schedule

| **Sequence.** | **Unit Code and Unit Title** | **Cluster Group #**  **Or Stand Alone** | **Unit Delivery Mode** | **Training and Assessment Hours** | **Unit**  **Start and End dates** | **Assessment:**  **Methods and Weighting**  *(refer to legend)* | **Assessment: Due Dates** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | MSL934006 - Apply quality system and continuous improvement processes | Stand alone | Blended | T = 16  A = 2 |  | Pro - Research  Kn – Short answer |  |
| **2** | MSL944002 - Maintain laboratory/field workplace safety | Stand alone | Blended | T = 16  A = 2 |  | Sk – Practical observation  Kn – Short answer |  |
| **3** | MSL924004 - Use laboratory application software | Stand alone | Blended | T = 24  A = 3 |  | Kn – Short answer 1  Kn – Short answer 2  Kn – Short answer 3 |  |
| **4** | MSL973013  - Perform basic tests | Stand alone | Blended | T = 32  A = 4 |  | Sk – Practical observation  Kn – Short answer  Pro - Research |  |
| **5** | MSL974020 - Perform food tests | Stand alone | Blended | T = 32  A = 4 |  | Sk - Practical  Kn – Short answer |  |
| **6** | MSL933008 - Perform calibration checks on equipment and assist with its maintenance | Stand alone | Blended | T = 24  A = 3 |  | Sk – Practical  Kn – Short answer |  |
| **7** | MSL973014 - Prepare working solutions | Stand alone | Blended | T = 32  A = 4 |  | Sk – Practical  Kn – Short answer |  |
| **8** | MSL953003 - Receive and prepare samples for testing | Stand alone | Blended | T = 32  A = 4 |  | Kn – Short answer  Pro – Product 1  Pro – Product 2 |  |
| **9** | MSL974019 - Perform chemical tests and procedures | Stand alone | Blended | T = 50  A = 4 |  | Sk – Practical  Kn – Short answer |  |
| **10** | MSL904002 - Perform standard calibrations | Stand alone | Blended | T = 49  A = 5 |  | Sk - Practical  Kn – Short answer 1  Kn – Short answer 2 |  |
| **11** | MSL974017 - Prepare, standardise and use solutions | Stand alone | Blended | T = 49  A = 5 |  | Sk - Practical  Kn – Short answer |  |
| **12** | MSL934004 - Maintain and calibrate instruments and equipment | Stand alone | Blended | T = 32  A = 4 |  | Kn – Short answer  Sk – Practical 1  Sk – Practical 2  Pro - Research |  |
| **13** | MSL954004 - Obtain representative samples in accordance with a sampling plan | Stand alone | Blended | T = 32  A = 4 |  | Sk - Practical  Kn – Short answer |  |
| **14** | MSL924003 - Process and interpret data | Stand alone | Blended | T = 32  A = 4 |  | Kn – Short answer 1  Kn – Short answer 2  Kn – Short answer 3 |  |
| **15** | MSL975040 - Apply routine chromatographic techniques | Stand alone | Blended | T = 48  A = 6 |  | Sk – Practical 1  Sk – Practical 2  Kn – Short answer 1  Kn – Short answer 2 |  |

5. Master TAS Approval

**Product Manager**

Name: asamuelson(Adam.Samuelson@tafensw.edu.au) **Adam Samuelson**

Signature: Approval was given electronically in DATA (see request 1646):

<https://live.nei.tafensw.edu.au/DATA2/Site/Approvals/step2.aspx?request_id=1646>

Date: 01/09/2019, 01:07 PM **15/8/2019**

**Senior Manager, Product Development Support**

Name: revans (Racheal.Evans@tafensw.edu.au)

Signature: Approval was given electronically in DATA (see request 1646):

<https://live.nei.tafensw.edu.au/DATA2/Site/Approvals/step2.aspx?request_id=1646>

Date: 01/09/2019, 02:03 PM

**Head of SkillsPoint**

Name: jfuller (Joanne.Fuller@tafensw.edu.au)

Signature: Approval was given electronically in DATA (see request 1646):

<https://live.nei.tafensw.edu.au/DATA2/Site/Approvals/step2.aspx?request_id=1646>

Date: 01/09/2019, 06:28 PM

PART B – Delivery TAS Information

6. Delivery Details

**Delivery Location**

Campus:

Region:

**Offering Owner**

Name:

ebs Identifier:

**Mode/s of Delivery**

Face to Face Learning

Workplace Training

Online Learning

Blended

Other:

**Details of Target Student Group**

**Duration**

Total Hours:

Total Weeks:

Start and End Date:

### 6.1 Entry Requirements

The following **local entry requirements** exist for this course:

### 6.2 Additional Student Support at Delivery Location

The following additional Student Support is available:

### 6.3 Contextualisation

Following from the Delivery Strategy outlined in Section 4 above, the following arrangements have been made to contextualise delivery of this Training Product to meet the needs of this student group:

7. Third Party Arrangements

Are any training and assessment components for this product delivered by a third party, and if so has the required written agreement been put in place?  Yes  No

If yes, please provide a summary of the third party arrangement:

Have the details of this arrangement been attached?  Yes  No

Have details of this arrangement been provided to TAFE NSW Governance, Legal and Risk?  Yes  No

Has ASQA been notified of this arrangement prior to any delivery commencing?  Yes  No

8. Staff Qualifications and Industry Experience

Insert link to detailed staff matrix.

Table 9 Staff Matrix

| **No** | **Units of Competency Delivering / Assessing**  (multiple units can be grouped together) | **Trainer/ Assessor Name** | **Trainer, Assessor or Both** | **Training and Assessment Qualifications**  **AND**  **Current evidence of ongoing development in training and assessment practice**  *(including correct title, name of provider and date)* | * **Vocational Qualifications** * **Licences** * **Professional development including ongoing exposure and development to maintain currency of industry skills**   *(including correct title, name of provider and date)* |
| --- | --- | --- | --- | --- | --- |
| *Delete this row after completing table* | *RII30915 - Certificate III in Civil Construction (Release 1)*  *RIIBEF201D*  *RIICOM201D*  *RIIOHS201D* | *Joe Bloggs* | Trainer only | * TAE40110 Certificate IV in Training and Assessment – ABC Training 23 November 2016. * VELG Assessment Practices Workshop 5 June 2018. * HTAN Training News Update Breakfast Meeting 26 March 2018. * ASQA Training Provider Briefing Session June 2018 | * BCC30107 - Certificate III in Civil Construction – XYZ Training 17 June 2008. * RII30913 - Certificate III in Civil Construction – Bendigo Kangan Institute – 03 June 2013 * CPCCOHS1001A - Work safely in the construction industry - XYZ Training 3 Sep 2009. * Construction Australia Expo, Brisbane, 11 March 2017 * Australian Building Codes Board Seminar, Canberra, 20 October 2017 * Civil Engineer operating own consultancy from 2005-current. |
| **1** |  |  | Choose an item. |  |  |
| **2** |  |  | Choose an item. |  |  |
| **3** |  |  | Choose an item. |  |  |
| **4** |  |  | Choose an item. |  |  |
| **5** |  |  | Choose an item. |  |  |
| **6** |  |  | Choose an item. |  |  |
| **7** |  |  | Choose an item. |  |  |
| **8** |  |  | Choose an item. |  |  |
| **9** |  |  | Choose an item. |  |  |
| **10** |  |  | Choose an item. |  |  |
| **11** |  |  | Choose an item. |  |  |
| **12** |  |  | Choose an item. |  |  |
| **13** |  |  | Choose an item. |  |  |
| **14** |  |  | Choose an item. |  |  |
| **15** |  |  | Choose an item. |  |  |
| **16** |  |  | Choose an item. |  |  |
| **17** |  |  | Choose an item. |  |  |

9. Additional Industry/Community Engagement

Training and assessment practices must be relevant to the needs of industry and communities and be informed by consultation, this may also influence resources and staff currency. Details below are of further engagement activities undertaken for this training product at a Regional/Local level.

Table 10 Additional Industry/Community Engagement

| **No** | **Industry/Organisation** | **Representative Name** | **Contact Details**  **(Email/Telephone)** | **Date of Consultation** | **How did this engagement influence one or more of the following?**   * Qualification/ Course / Skill set selection * Elective selection and/or sequencing * Mode of study * Training Methods * Assessment Methods * Trainer and assessor requirements * Training and assessment resources and equipment * Contextualisation |
| --- | --- | --- | --- | --- | --- |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **8** |  |  |  |  |  |
| **9** |  |  |  |  |  |

10. Assessment Validation

Validation is the quality review of the assessment processes and judgements. Validation involves checking that the assessment tool/s produce/s valid, reliable, sufficient, current and authentic evidence that complies with the appropriate AQF level and the dimensions of competency to enable reasonable judgments to be made as to whether the requirements of the training package or VET accredited courses are met. It includes reviewing a statistically valid sample of the assessments and making recommendations for future improvements to the assessment tool, process and/or outcomes and acting upon such recommendations.

Clause 1.9 and 1.10 of the Standards for RTOs require that the RTO implements a plan for ongoing systematic validation of assessment practices and judgements; the plan needs to ensure that each training product is validated at least once every five years, with at least 50% of products validated within the first three years of each five year cycle.

### 10.1 Validation of assessment judgements

Details of the scheduled validation of judgements for the training product identified in this Training and Assessment Strategy are provided below:

Table 10 Validation of assessment judgements

| **Date of last validation of judgements** | **Codes and names of units validated** | **Number of judgements included in the sample for each unit** | **Have the actions arising from the validation been completed and signed off? If No, please outline below outstanding actions and when they are due for completion** | **Scheduled date of next validation of judgements** |
| --- | --- | --- | --- | --- |
| Click here to enter a date. |  |  | Yes No | Click here to enter a date. |

Location of validation record:

Details confirmed by:

Signature:

11. Delivery TAS Approval

The signatures below indicate that the Delivery Team meets the requirements of the Master Product outlined above. Any additional Contextualisation must be outlined in a Business Case and referred back to the SkillsPoint - details in Part A above.

**Delivery Location**

Campus:

Region:

**Team Leader (or equivalent)**

Name:

Signature:

Date:

**Head of Skills Team**

Name:

Signature:

Date:

**Head of Delivery, Implementation and Performance**

Name:

Signature:

Date: