



# MSS Sustainability Training Package

## Companion Volume – *Implementation Guide*

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This Companion Volume Implementation Guide has been prepared on behalf of the Sustainability Industry Reference Committee (IRC) for the Australian Industry Skills Committee (AISC).

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# Introduction

## Who is this guide for?

The MSS Sustainability Training Package Companion Volume Implementation Guide (CVIG) is designed to assist Registered Training Organisations (RTOs), State/Territory Training Authorities (STAs), regulators, assessors, trainers, and enterprises in delivering training based on the units of competency and qualifications in the MSS Sustainability Training Package.

It has been developed to assist RTOs in meeting the requirements of the *Standards for Registered Training Organisations (RTOs) 2015*.

## What is in this guide?

This CVIG provides specific information and advice about the structure of the qualifications and their key features, implementation advice and information on licensing and regulatory requirements. The document includes:

- top level summaries of changes between releases of the Training Package
- lists of components in the current release
- overview of the Training Package, key work and training requirements
- outline of regulatory and licensing requirements
- guidance on selecting qualifications and electives
- advice on implementing training and assessment.

The Appendices include:

- mapping of qualifications
- mapping of units of competency, including prerequisites
- mapping of Skill Sets
- AQF certificate level descriptions and relationship to the qualifications
- employability skills summaries
- industry taxonomy (terms and definitions).

## Version control and modification history

### Version control

TP Release	Status	Release date	Approval process
5.0	Current	16 December 2022	Endorsement
4.2	Replaced	6 April 2022	Minor upgrade
4.1	Replaced	21 April 2021	Minor upgrade
4.0	Replaced	30 July 2020	Endorsement
3.0	Replaced	25 June 2019	Endorsement
2.0	Replaced	22 October 2018	Endorsement
1.0	Replaced	22 June 2016	Endorsement

### Modification history details

#### *Release 5.0: Summary of changes from MSS release 4.2 to Release 5.0*

11 units deleted:

- MSS015020 Facilitate an energy audit
- MSS015039 Develop response to corporate social responsibility
- MSS017009 Analyse and determine organisational risk areas in sustainability
- MSS017010 Determine process loss through mass or energy balancing
- MSS017011 Identify and respond to external sustainability factors for an organisation
- MSS024024 Undertake simple environmental project activities
- MSS025012 Perform environmental microbiological tests
- MSS027015 Provide environmental advice to clients
- MSS027017 Contribute to environmental decision making
- MSS027018 Undertake complex environmental project work
- MSS405085 Develop a documentation control strategy for an organisation

12 unit merged:

Unit code	Unit title	Merged into (new code)
MSS015035	Report to Global Reporting Initiative Standards	MSS015045
MSS402041	Apply 5S in an office	MSS402042
MSS403039	Facilitate and improve 5S in an office	MSS403045
MSS403042	Facilitate mistake proofing in an office	MSS404051
MSS403043	Facilitate breakthrough improvements in an office	MSS403058
MSS405007	Introduce competitive systems and practices to a small or medium enterprise	MSS405000
MSS405023	Develop a levelled pull system for operations and processes	MSS405039
MSS405032	Analyse cost implications of maintenance	MSS405077
MSS407008	Capture learning from daily activities in an organisation	MSS405046 AND MSS408011

MSS407018	Review operations practice tools and techniques	MSS408015
MSS407022	Facilitate improvements in the external value stream	MSS408016
MSS408002	Audit the use of competitive tools	MSS408015

131 units revised:

- MSS014015 Improve sustainability through readily implementable change
- MSS014016 Evaluate sustainability impact from a work area or process
- MSS014017 Implement social sustainability in work practices
- MSS014019 Facilitate team engagement with sustainability
- MSS014020 Optimise sustainability performance of a work area or process
- MSS015040 Conduct a sustainability energy audit
- MSS015042 Measure and report carbon footprint
- MSS015043 Develop strategies for more sustainable use of resources
- MSS015044 Design sustainable product or process
- MSS015045 Develop required sustainability reports
- MSS015046 Develop a business case for sustainability improvements
- MSS015047 Develop strategic sustainability plans
- MSS015048 Implement sustainability plans
- MSS015049 Conduct a sustainable water use audit
- MSS015050 Conduct an emissions audit
- MSS015052 Develop regulated sustainability reports
- MSS017020 Lead sustainability strategy deployment
- MSS024025 Work and communicate effectively as an environmental technician
- MSS024026 Apply environmental management procedures
- MSS024027 Participate in environmental field work
- MSS024028 Process and present environmental data
- MSS024029 Collect spatial and discrete environmental data
- MSS024030 Perform sampling and testing of water
- MSS024031 Collect and evaluate meteorological data
- MSS024032 Document simple geological information for a site
- MSS024033 Identify environmentally significant organisms
- MSS024034 Navigate in urban, regional and remote areas
- MSS025024 Produce site maps
- MSS025025 Monitor and evaluate noise
- MSS025026 Perform sampling and testing of air
- MSS025028 Assist with assessing and monitoring wetlands
- MSS025029 Perform sampling and testing for site contamination
- MSS025030 Assist with assessing site environmental indicators
- MSS025031 Assess the environmental risk and impact of a project activity or process
- MSS025032 Report environmental data
- MSS025033 Provide environmental information to customers
- MSS025034 Collect and evaluate groundwater data
- MSS025035 Perform sampling and testing of soils
- MSS025036 Plan and conduct environmental project work
- MSS027025 Coordinate environmental management activities
- MSS027026 Implement environmental legislation, codes and standards
- MSS402003 Apply competitive systems and practices
- MSS402004 Sustain process improvements
- MSS402011 Manage the impact of change on own work

- MSS402022 Apply quick changeover procedures
- MSS402023 Apply Just in Time procedures
- MSS402032 Interpret cost and waste in terms of customer value
- MSS402042 Apply 5S procedures
- MSS402054 Monitor process capability
- MSS402055 Apply quality standards
- MSS402056 Apply and improve standardised work practices
- MSS402057 Participate in breakthrough improvements
- MSS402062 Use SCADA systems in operations
- MSS402084 Undertake root cause analysis
- MSS402085 Contribute to the application of a proactive maintenance strategy
- MSS402087 Apply cost factors to work practices
- MSS402086 Use planning software systems in operations
- MSS403003 Contribute to improvements in competitive systems and practices
- MSS403008 Facilitate use of a Balanced Scorecard for performance improvement
- MSS403009 Facilitate implementation of competitive systems and practices in a service environment
- MSS403012 Facilitate change in a competitive systems and practices environment
- MSS403014 Facilitate team engagement with competitive systems and practices
- MSS403022 Facilitate a Just in Time system
- MSS403025 Monitor a levelled pull system of operations
- MSS403026 Work within a constrained process
- MSS403031 Analyse and improve manual handling processes
- MSS403036 Identify product groups to inform improvement priorities
- MSS403037 Implement the visual workplace
- MSS403045 Facilitate and improve 5S
- MSS403056 Map an internal value stream
- MSS403057 Map an operational process
- MSS403058 Facilitate breakthrough improvements
- MSS403059 Facilitate continuous improvement through the use of standardised procedures and practices
- MSS403080 Improve changeovers
- MSS403081 Ensure process improvements are sustained
- MSS403082 Improve cost factors in work practices
- MSS404051 Mistake proof a process
- MSS404055 Use DMAIC techniques
- MSS404056 Apply statistics to operational processes
- MSS404062 Facilitate the use of planning software systems in a work area or team
- MSS404063 Facilitate the use of SCADA systems in a team or work area
- MSS404080 Undertake process capability improvements
- MSS404088 Undertake proactive maintenance analyses
- MSS404089 Assist in implementing a proactive maintenance strategy
- MSS404090 Support proactive maintenance
- MSS405000 Develop competitive systems and practices for operational objectives
- MSS405017 Develop business plans in an organisation implementing competitive systems and practices
- MSS405018 Implement competitive systems and practices in a one-off or small batch environment
- MSS405019 Develop a Balanced Scorecard



- MSS405025 Analyse and map a value stream
- MSS405026 Manage a value stream
- MSS405027 Facilitate a competitive systems and practice culture in an organisation
- MSS405028 Develop a communications strategy to support operations
- MSS405045 Manage relationships with non-customer external organisations
- MSS405046 Manage workplace learning
- MSS405029 Develop quick changeover procedures
- MSS405034 Develop a Just in Time system
- MSS405035 Design a process layout
- MSS405037 Facilitate application of theory of constraints
- MSS405038 Optimise process costs
- MSS405047 Undertake analysis of cost and waste in terms of customer value
- MSS405039 Implement and optimise levelled pull system
- MSS405042 Manage 5S system in an organisation
- MSS405043 Implement improvement systems in an organisation
- MSS405057 Design an experiment
- MSS405055 Manage application of six sigma for process control and improvement
- MSS405056 Use three or six sigma processes to determine and improve process capability
- MSS405065 Develop the application of enterprise control systems in an organisation
- MSS405066 Establish data collection and processing protocols
- MSS405076 Facilitate the development of a new product
- MSS405077 Develop a proactive maintenance strategy
- MSS405090 Adapt a proactive maintenance strategy to the process operations sector
- MSS405091 Adapt a proactive maintenance strategy for a seasonal or cyclical business
- MSS405078 Lead and manage people within competitive systems and practices
- MSS407023 Quantitatively analyse impact of process changes
- MSS407029 Improve visual management in the workplace
- MSS407030 Manage benchmarking studies
- MSS407024 Prepare for and implement change
- MSS407025 Build internal relationships to support competitive systems and practices
- MSS407026 Lead a process to determine and solve root cause for a complex problem
- MSS407031 Review continuous improvement processes
- MSS407032 Facilitate improvements in the internal value stream
- MSS407033 Qualitatively review process changes
- MSS407034 Respond to a major non-conformance
- MSS408015 Develop the competitive systems and practices approach
- MSS408016 Develop the value stream
- MSS408011 Develop knowledge systems and learning processes for an organisation
- MSS408017 Analyse and refine improvement systems
- MSS408012 Develop problem solving capability of an organisation
- MSS408013 Develop best practice model for future state operations
- MSS408018 Analyse data to determine organisational learning

9 new units:

- MSS014018 Apply circularity design thinking to all work streams (packaged in MSS40122 Certificate IV in Sustainable Operations, MSS50122 Diploma of Sustainable Operations, MSS40222 Certificate IV in Environmental Monitoring and Technology and MSS50222 Diploma of Environmental Monitoring and Technology)
- MSS015054 Lead circular economy initiatives in the supply chain (packaged in MSS40122 Certificate IV in Sustainable Operations and MSS50122 Diploma of Sustainable Operations)

- MSS017021 Set strategic direction for circularity (packaged in MSS50122 Diploma of Sustainable Operations)
- MSS017022 Establish systemic supports for circularity (packaged in MSS50122 Diploma of Sustainable Operations)
- MSS017023 Establish collaborative business arrangements (packaged in MSS50122 Diploma of Sustainable Operations)
- MSS403004 Contribute to Agile work practices (packaged in MSS30322 Certificate III in Competitive Systems and Practices)
- MSS404001 Lead Agile team processes (packaged in MSS40322 Certificate IV in Competitive Systems and Practices)
- MSS405044 Facilitate Agile projects (packaged in MSS50322 Diploma of Competitive Systems and Practices)
- MSS408014 Establish systemic supports for competitive systems and practices (packaged in MSS80322 Graduate Certificate in Competitive Systems and Practices and MSS80422 Graduate Diploma of Competitive Systems and Practices)

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2 qualifications deleted:

- MSS20316 Certificate II in Competitive Systems and Practices
- MSS60316 Advanced Diploma of Competitive Systems and Practices

9 qualifications revised:

- MSS30322 Certificate III in Competitive Systems and Practices
- MSS40122 Certificate IV in Sustainable Operations
- MSS40222 Certificate IV in Environmental Monitoring and Technology
- MSS40322 Certificate IV in Competitive Systems and Practices
- MSS50122 Diploma of Sustainable Operations
- MSS50222 Diploma of Environmental Monitoring and Technology
- MSS50322 Diploma of Competitive Systems and Practices
- MSS80322 Graduate Certificate in Competitive Systems and Practices
- MSS80422 Graduate Diploma of Competitive Systems and Practices

12 new Skill Sets:

- MSSSS00027 Testing for site contamination
- MSSSS00028 Lead sustainability improvements
- MSSSS00029 Contribute to sustainable operations
- MSSSS00018 Continuous Improvement Fundamentals Skill Set
- MSSSS00019 CSP Fundamentals Skill Set
- MSSSS00020 Apply 5S Skill Set
- MSSSS00021 Operational Data Analytics Skill Set
- MSSSS00022 Visual Management Skill Set
- MSSSS00023 Work Standardisation Skill Set
- MSSSS00024 Problem Solving Skill Set
- MSSSS00025 Facilitate Team Improvement Activities Skill Set
- MSSSS00026 Senior Leadership Skill Set

3 Skills Sets updated:

- MSSSS00030 Determine energy usage
- MSSSS00031 Improve energy usage for a work area
- MSSSS00032 Improve energy usage for a process or organisation

3 Skill Sets deleted:

- MSSSS00007 Lead energy and greenhouse gas improvements
- MSSSS00012 Recommend energy improvements
- MSSSS00013 Reduce sustainability risk

### *Release 4.2: Summary of changes from MSS Release 4.1 to Release 4.2*

Release 4.2 of the MSS Sustainability Training Package updated the imported unit HLTAID003 to HLTAID011 as directed by the Australian Industry and Skills Committee (meeting 1 December 2021).

### *Release 4.1: Summary of changes from MSS Release 4.0 to Release 4.1*

Release 4.1 of the MSS Sustainability Training Package removed low use units from the training package as determined at the December 2020 AISC meeting in response to Skills Ministers' objectives.

22 units deleted:

- MSS014012 Apply proactive maintenance strategies to sustainability
- MSS024021 Assist with assessing and monitoring stormwater systems
- MSS025011 Assist with odour field assessment
- MSS025010 Assist with odour source assessment
- MSS015031 Conduct a sustainability related transport audit
- MSS027016 Contribute to improving environmental performance
- MSS014013 Contribute to sustainability related audits
- MSS027021 Coordinate air quality management activities
- MSS027022 Coordinate noise management activities
- MSS027023 Coordinate site remediation or rehabilitation activities
- MSS027020 Coordinate water quality management activities
- MSS017015 Design for sustainability
- MSS017016 Develop a proactive social sustainability strategy
- MSS015036 Develop response to sustainability related regulation
- MSS015038 Establish and review metrics for social sustainability
- MSS017014 Identify and improve sustainability interactions with the community
- MSS027019 Implement and maintain the site health and safety management system
- MSS015033 Implement and monitor reengineering for sustainability
- MSS015034 Inform and educate organisation and community representatives on sustainability issues
- MSS017013 Manage a major sustainability non-conformance
- MSS025016 Perform sampling and testing of stationary emissions
- MSS027024 Select, commission and maintain environmental monitoring instruments

2 qualifications deleted:

- MSS80118 Graduate Certificate in Sustainable Operations
- MSS80218 Graduate Certificate in Environmental Management

4 qualifications were updated to remove deleted units from elective banks:

- MSS40118 Certificate IV in Sustainable Operations
- MSS40218 Certificate IV in Environmental Monitoring and Technology
- MSS50218 Diploma of Environmental Monitoring and Technology
- MSS50118 Diploma of Sustainable Operations

3 skill sets deleted:

- MSSSS00008 Audit energy usage for a work area
- MSSSS00014 Direct Corporate Social Responsibility
- MSSSS00015 Lead Response to Corporate Social Responsibility

### *Release 4.0: Summary of changes from MSS Release 3.0 to Release 4.0*

Release 4.0 of the MSS Sustainability Training Package incorporates new and revised content relating to energy management.

2 new units of competency:

- MSS405087 Investigate energy management as a business issue
- MSS405089 Develop a business case for improved energy management

1 new skill set:

- MSSSS00016 Energy Management

1 revised unit of competency:

- MSS405088 Plan, implement and monitor energy management

1 revised skill set:

- MSSSS00017 Improve energy usage for a process or organisation

The units will be included in qualifications as outlined below:

- MSS40118 Certificate IV in Sustainable Operations (Group A) – all units
- MSS50118 Diploma of Sustainable Operations (Group A) – all units
- MSS40316 Certificate IV in Competitive Systems and Practices (Group C) – all units
- MSS50316 Diploma of Competitive Systems and Practices (Group C) – all units
- MSS60316 Advanced Diploma of Competitive Systems and Practices (Group C) - MSS405088 and MDD405089 (MSS40587 not appropriate for this qualification with only 4 units)

### *Release 3.0: Summary of changes from MSS Release 2.0 to Release 3.0*

Release 3.0 of the MSS Sustainability Training Package incorporates new and revised content relating to corporate social responsibility and a range of other changes to units, qualifications and skill sets. MSS Release 2.0.

#### Qualifications

10 updated and equivalent qualifications:

- MSS30316 Certificate III in Competitive Systems and Practices
- MSS40316 Certificate IV in Competitive Systems and Practices

- MSS40118 Certificate IV in Sustainable Operations
- MSS50316 Diploma of Competitive Systems and Practices
- MSS50118 Diploma of Sustainable Operations
- MSS60316 Advanced Diploma of Competitive Systems and Practices
- MSS80316 Graduate Certificate in Competitive Systems and Practices
- MSS80218 Graduate Certificate in Environmental Management
- MSS80118 Graduate Certificate in Sustainable Operations
- MSS80416 Graduate Diploma in Competitive Systems and Practices

### Units of competency

1 new unit of competency:

- MSS015039 Develop response to corporate social responsibility

31 existing units of competency with a code change:

- MSS015035 Report to Global Reporting Initiative Standards
- MSS015036 Develop response to sustainability related regulation
- MSS015037 Develop regulated sustainability reports
- MSS015038 Establish and review metrics for social sustainability
- MSS027020 Coordinate water quality management activities
- MSS027021 Coordinate air quality management activities
- MSS027022 Coordinate noise management activities
- MSS027023 Coordinate site remediation or rehabilitation activities
- MSS027024 Select, commission and maintain environmental monitoring instruments
- MSS403052 Map an office value stream
- MSS403053 Map an operational process
- MSS403054 Facilitate breakthrough improvements
- MSS403055 Facilitate continuous improvement through the use of standardised procedures and practices
- MSS404054 Apply statistics to operational processes
- MSS404085 Undertake proactive maintenance analyses
- MSS404086 Assist in implementing a proactive maintenance strategy
- MSS404087 Support proactive maintenance
- MSS405008 Analyse and map a value stream
- MSS405009 Manage a value stream
- MSS405015 Manage relationships with non-customer external organisations
- MSS405016 Manage workplace learning
- MSS405054 Determine and improve process capability
- MSS405063 Develop the application of enterprise control systems in an organisation
- MSS405064 Determine and establish information collection requirements and processes
- MSS407018 Review use of competitive systems and practices tools
- MSS407019 Facilitate improvements in the internal value chain
- MSS407020 Undertake a qualitative review of a process change
- MSS407021 Respond to a major non-conformance
- MSS407022 Facilitate improvements in the external value chain
- MSS408009 Develop models of future state operations practice
- MSS408010 Analyse data for relevance to organisational learning

Each of the above units supersedes and is equivalent to the previous release, except for *MSS015035 Report to Global Reporting Initiative Standards* which is NOT equivalent.

1 updated unit with no code change due to only minor updates.

- MSS405013 Facilitate a holistic culture improvement in an organisation

1 unit of competency removed:

- MSS403013 Lead team culture improvement (Superseded by MSS405013)

#### Skill sets

2 new skill sets:

- MSSSS00014 SS14 Direct Corporate Social Responsibility
- MSSSS00015 SS15 Lead Response to Corporate Social Responsibility

#### Continuous improvement changes

The following issues/errors from IBSA's ongoing *Continuous Improvement Register* identified since Release 2.0 and actioned in Release 3.0:

- clarification of entry requirement terminology in MSS80118 Graduate Certificate in Sustainable Operations.
- clarification of knowledge requirement in MSS015024 Develop required sustainability reports.

## Release 5.0 Qualifications, Skill sets and Units of Competency

The following provides complete lists of the components in MSS Sustainability Release 5.0, with pre-requisites and imported units.

Please see appendices for mapping of Release 5.0 content to previous versions:

- Appendix 1: Mapping of qualifications
- Appendix 2: Mapping of units of competency
- Appendix 3: Mapping of skill sets.

### MSS Qualifications

- MSS30322 Certificate III in Competitive Systems and Practices
- MSS40122 Certificate IV in Sustainable Operations
- MSS40222 Certificate IV in Environmental Monitoring and Technology
- MSS40322 Certificate IV in Competitive Systems and Practices
- MSS50122 Diploma of Sustainable Operations
- MSS50222 Diploma of Environmental Monitoring and Technology
- MSS50322 Diploma of Competitive Systems and Practices
- MSS80322 Graduate Certificate in Competitive Systems and Practices
- MSS80422 Graduate Diploma of Competitive Systems and Practices

### MSS Skill Sets

- MSSSS00009 Determine energy usage
- MSSSS00011 Improve energy usage for a work area
- MSSSS00016 Energy Management
- MSSSS00017 Improve energy usage for a process or organisation
- MSSSS00018 Continuous Improvement Fundamentals Skill Set
- MSSSS00019 CSP Fundamentals Skill Set
- MSSSS00020 Apply 5S Skill Set
- MSSSS00021 Operational Data Analytics Skill Set
- MSSSS00022 Visual Management Skill Set
- MSSSS00023 Work Standardisation Skill Set
- MSSSS00024 Problem Solving Skill Set
- MSSSS00025 Facilitate Team Improvement Activities Skill Set
- MSSSS00026 Senior Leadership Skill Set

- MSSSS00027 Testing for site contamination
- MSSSS00028 Lead sustainability improvements
- MSSSS00029 Contribute to sustainable operations

## MSS Units of competency and prerequisites

Unit code	Unit title	Pre-requisites
MSS014015	Improve sustainability through readily implementable change	
MSS014016	Evaluate sustainability impact FROM a work area or process	
MSS014017	Implement social sustainability in work practices	
MSS014018	Apply circularity design thinking to all work streams	
MSS014019	Facilitate team engagement with sustainability	
MSS014020	Optimise sustainability performance of a work area or process	
MSS015040	Conduct a sustainability energy audit	
MSS015042	Measure and report carbon footprint	
MSS015043	Develop strategies for more sustainable use of resources	
MSS015044	Design sustainable product or process	
MSS015045	Develop required sustainability reports	
MSS015046	Develop a business case for sustainability improvements	
MSS015047	Develop strategic sustainability plans	
MSS015048	Implement sustainability plans	
MSS015049	Conduct a sustainable water use audit	
MSS015050	Conduct an emissions audit	
MSS015052	Develop regulated sustainability reports	
MSS015054	Lead circular economy initiatives in the supply chain	
MSS017020	Lead sustainability strategy deployment	
MSS017021	Set strategic direction for circularity	
MSS017022	Establish systemic supports for circularity	
MSS017023	Establish collaborative business arrangements	
MSS024025	Work and communicate effectively as an environmental technician	
MSS024026	Apply environmental management procedures	
MSS024027	Participate in environmental field work	
MSS024028	Process and present environmental data	
MSS024029	Collect spatial and discrete environmental data	
MSS024030	Perform sampling and testing of water	



Unit code	Unit title	Pre-requisites
MSS024031	Collect and evaluate meteorological data	
MSS024032	Document simple geological information for a site	
MSS024033	Identify environmentally significant organisms	
MSS024034	Navigate in urban, regional and remote areas	
MSS025024	Produce site maps	MSS024029
MSS025025	Monitor and evaluate noise	
MSS025026	Perform sampling and testing of air	
MSS025028	Assist with assessing and monitoring wetlands	
MSS025029	Perform sampling and testing for site contamination	MSS024032
MSS025030	Assist with assessing site environmental indicators	MSS024027
MSS025031	Assess the environmental risk and impact of a project activity or process	MSS024027
MSS025032	Report environmental data	MSS024028
MSS025033	Provide environmental information to customers	
MSS025034	Collect and evaluate groundwater data	
MSS025035	Perform sampling and testing of soils	MSS024032
MSS025036	Plan and conduct environmental project work	
MSS027025	Coordinate environmental management activities	
MSS027026	Implement environmental legislation, codes and standards	
MSS402003	Apply competitive systems and practices	
MSS402004	Sustain process improvements	
MSS402011	Manage the impact of change on own work	
MSS402022	Apply quick changeover procedures	
MSS402023	Apply Just in Time procedures	
MSS402032	Interpret cost and waste in terms of customer value	
MSS402042	Apply 5S procedures	
MSS402054	Monitor process capability	
MSS402055	Apply quality standards	
MSS402056	Apply and improve standardised work practices	
MSS402057	Participate in breakthrough improvements	
MSS402062	Use SCADA systems in operations	
MSS402084	Undertake root cause analysis	

Unit code	Unit title	Pre-requisites
MSS402085	Contribute to the application of a proactive maintenance strategy	
MSS402086	Use planning software systems in operations	
MSS402087	Apply cost factors to work practices	
MSS403003	Contribute to improvements in competitive systems and practices	
MSS403004	Contribute to Agile work practices	
MSS403008	Facilitate use of a Balanced Scorecard for performance improvement	
MSS403009	Facilitate implementation of competitive systems and practices in a service environment	
MSS403012	Facilitate change in a competitive systems and practices environment	
MSS403014	Facilitate team engagement with competitive systems and practices	
MSS403022	Facilitate a Just in Time system	
MSS403025	Monitor a levelled pull system of operations	
MSS403026	Work within a constrained process	
MSS403031	Analyse and improve manual handling processes	
MSS403036	Identify product groups to inform improvement priorities	
MSS403037	Implement the visual workplace	
MSS403045	Facilitate and improve 5S	
MSS403056	Map an internal value stream	
MSS403057	Map an operational process	
MSS403058	Facilitate breakthrough improvements	
MSS403059	Facilitate continuous improvement through the use of standardised procedures and practices	
MSS403080	Improve changeovers	
MSS403081	Ensure process improvements are sustained	
MSS403082	Improve cost factors in work practices	
MSS404001	Lead Agile team processes	
MSS404051	Mistake proof a process	
MSS404055	Use DMAIC techniques	
MSS404056	Apply statistics to operational processes	

Unit code	Unit title	Pre-requisites
MSS404062	Facilitate the use of planning software systems in a work area or team	
MSS404063	Facilitate the use of SCADA systems in a team or work area	
MSS404080	Undertake process capability improvements	
MSS404088	Undertake proactive maintenance analyses	
MSS404089	Assist in implementing a proactive maintenance strategy	
MSS404090	Support proactive maintenance	
MSS405000	Develop competitive systems and practices for operational objectives	
MSS405017	Develop business plans in an organisation implementing competitive systems and practices	
MSS405018	Implement competitive systems and practices in a one-off or small batch environment	
MSS405019	Develop a Balanced Scorecard	
MSS405025	Analyse and map a value stream	
MSS405026	Manage a value stream	
MSS405027	Facilitate a competitive systems and practice culture in an organisation	
MSS405028	Develop a communications strategy to support operations	
MSS405029	Develop quick changeover procedures	MSS404056
MSS405034	Develop a Just in Time system	
MSS405035	Design a process layout	
MSS405037	Facilitate application of theory of constraints	
MSS405038	Optimise process costs	
MSS405039	Implement and optimise levelled pull system	
MSS405042	Manage 5S system in an organisation	
MSS405043	Implement improvement systems in an organisation	
MSS405044	Facilitate Agile projects	
MSS405045	Manage relationships with non-customer external organisations	
MSS405046	Manage workplace learning	
MSS405047	Undertake analysis of cost and waste in terms of customer value	

Unit code	Unit title	Pre-requisites
MSS405055	Manage application of six sigma for process control and improvement	MSS404056
MSS405056	Use three or six sigma processes to determine and improve process capability	MSS404056
MSS405057	Design an experiment	MSS404056
MSS405065	Develop the application of enterprise control systems in an organisation	
MSS405066	Establish data collection and processing protocols	
MSS405076	Facilitate the development of a new product	MSS404056
MSS405077	Develop a proactive maintenance strategy	
MSS405078	Lead and manage people within competitive systems and practices	
MSS405087	Investigate energy management as a business issue	
MSS405088	Plan, implement and monitor energy management	
MSS405089	Develop a business case for improved energy management	
MSS405090	Adapt a proactive maintenance strategy to the process operations sector	
MSS405091	Adapt a proactive maintenance strategy for a seasonal or cyclical business	
MSS407023	Quantitatively analyse impact of process changes	
MSS407024	Prepare for and implement change	
MSS407025	Build internal relationships to support competitive systems and practices	
MSS407026	Lead a process to determine and solve root cause for a complex problem	
MSS407029	Improve visual management in the workplace	
MSS407030	Manage benchmarking studies	
MSS407031	Review continuous improvement processes	
MSS407032	Facilitate improvements in the internal value stream	
MSS407033	Qualitatively review process changes	
MSS407034	Respond to a major non-conformance	
MSS408011	Develop knowledge systems and learning processes for an organisation	
MSS408012	Develop problem solving capability of an organisation	

Unit code	Unit title	Pre-requisites
MSS408013	Develop best practice model for future state operations	
MSS408014	Establish systemic supports for competitive systems and practices	
MSS408015	Develop the competitive systems and practices approach	
MSS408016	Develop the value stream	
MSS408017	Analyse and refine improvement systems	
MSS408018	Analyse data to determine organisational learning	

## Imported units of competency

Unit code	Unit title	Prerequisites
BSBOPS403	Apply business risk management processes	
BSBPMG427	Apply project procurement procedures	
BSBPMG428	Apply project life cycle management processes	
BSBPMG429	Apply project stakeholder engagement technique	
BSBPMG430	Undertake project work	
BSBPMG536	Manage project risk	
BSBPMG537	Manage project procurement	
BSBPMG538	Manage project stakeholder engagement	
BSBSTR502	Facilitate continuous improvement	
BSBSTR801	Lead innovative thinking and practice	
BSBSTR802	Lead strategic planning processes for an organisation	
BSBTWK502	Manage team effectiveness	
BSBWHS419	Contribute to implementing WHS monitoring processes	
CPPSSI4024	Source and assess spatial data	
CPPWMT4003	Implement waste management plans	
CPPWMT4009	Conduct waste audits	
CPPWMT4010	Assess and advise on waste avoidance options	
CUAPHI312	Capture photographic images	
HLTAID011	Provide first aid	
MEM30016A	Assist in the analysis of a supply chain	
MSL904002	Perform standard calibrations	

Unit code	Unit title	Prerequisites
MSL924004	Use laboratory application software	
MSL934004	Maintain and calibrate instruments and equipment	
MSL943004	Participate in laboratory or field workplace safety	
MSL952001	Collect routine site samples	
MSL954004	Obtain representative samples in accordance with sampling plan	
MSL973013	Perform basic tests	
MSL973016	Perform aseptic techniques	
MSL973019	Perform microscopic examination	
MSL974018	Conduct geotechnical site investigations	
MSL974019	Perform chemical tests and procedures	
MSL974021	Perform biological procedures	
MSL974022	Undertake environmental field-based monitoring	
MSL975042	Design and supervise complex environmental field surveys	MSL974022
MSL975045	Perform laboratory-based ecological techniques	MSL974021
MSL975051	Supervise geotechnical site investigations	MSL974018
MSMENV272	Participate in environmentally sustainable work practices	
MSMENV472	Implement and monitor environmentally sustainable work practices	
MSMENV672	Develop workplace policy and procedures for environmental sustainability	
MSMSUP301	Apply HACCP to the workplace	
MSMSUP390	Use structured problem-solving tools	
MSMWHS200	Work safely	
PMASUP520	Review procedures to minimise environmental impact of process	
PUAFER009	Participate as a member of a workplace emergency initial response team	
TLIR4002	Source goods services and evaluate contractors	
TLIX0009X	Employ digital supply chain risk management practices	
TLIX0010X	Enable traceability in supply chains	
TLIX0011X	Establish blockchain in supply chains	
TLIX0012X	Lead digital supply chain implementation	
TLIX0015X	Manage fundamental aspects of supply chains	

# Overview of the MSS Sustainability Training Package

## Key work and training requirements

The MSS Sustainability Training Package covers three areas:

- Competitive Systems and Practices
- Sustainable Operations
- Environmental Monitoring and Technology.

### *Competitive Systems and Practices*

The Competitive Systems and Practices (CSP) qualifications and units of competency provide skills and knowledge which enable an organisation to:

- identify and reduce waste that is often overlooked
- audit and improve efficiency in energy and other resource use
- apply systematic, iterative and evidence-based approaches to continuous improvement
- embed and sustain improvements
- align organisational vision, values, strategies, operations and workplace practices
- adopt practices from methodologies such as Lean, Six Sigma, Agile, Total Productive Maintenance.

These skills can be applied within most organisations, and within any enterprise, function or section of the production value chain. Increasingly these concepts and practices are being applied in healthcare, agribusiness, food processing, pharmaceuticals, financial and other service organisations and in administration, logistics and warehousing functions.

The systems and practices within CSP may have various titles which can be confusing. Some titles refer to manufacturing, which is the origin of many competitive systems and practices. Other titles refer to specific techniques and still others to approaches which apply a range of their own techniques and techniques adapted from other approaches. The titles may also reference each other, for example, lean manufacturing, lean six sigma, lean operations, agile project management and so on. In addition, these terms have changed over time and the practices are increasingly being applied across a wide variety of industries.

Therefore 'Competitive Systems and Practices' is not an approach or system in its own right, it is a broad collective term intended to encompass the flexible application of various tools, techniques, systems and approaches that have synergies around continuous improvement, efficiency, business improvement or similar goals.

The intent is that learners will understand and apply the systems, practices, tools (etc) rather than the concept of 'Competitive Systems and Practices' itself.

The CSP qualifications complement but do not duplicate specific operational or technical skills required in an industry or job role. The qualifications provide add-on, or overlay, skills for people with experience in their primary role, for example in production, logistics, administration,

healthcare, maintenance, warehousing, financial services or general management. Where the candidate does not hold these skills the appropriate qualification from another Training Package should be considered.

The suite of CSP qualifications covers operational personnel through to senior management and leadership roles. Skill Sets are also available which target specific upskilling needs across these levels. The qualifications support an industry preferred 'whole of organisation' approach to implementation of CSP which can provide significant long-term benefits.

The 'whole of organisation' approach integrates the key activities and underpinning principles and values of CSP and aligns them with organisational direction, values and goals. Typically, this includes improvement projects, continuous improvement and standardisation of processes, technical expertise and proactive culture change, systems change and management support mechanisms.

Underpinning values and principles of CSP have been identified and incorporated into the skills and knowledge requirements across units of competency of selected units as relevant to the content and level of the unit.

These principles and values are particularly relevant to interpersonal and communication skills, leadership and management skills and change management including organisational culture improvement. Therefore, they should be embedded and supported across levels and areas of an organisation.

For the purposes of the CSP training products, the underpinning values and principles of CSP are:

- respect for people
- respect for process
- transparency and culture of learning
- creation of value and customer perceived value
- empowered teams and devolved decision making and/or strategy deployment
- go and see and/or go to the source decision making
- rapid cycle or iterative development
- empirical development.

Industry has highlighted that skills and knowledge in the field of Competitive Systems and Practices are best developed in a work-based setting within a whole of organisation implementation of CSP.

### *Environmental Monitoring and Technology*

The Environmental Monitoring and Technology qualifications cover environmental science and technology skills needed by environmental officers, compliance officers, technicians and field officers and similar roles. These roles typically conduct environmental sampling, testing and monitoring and assist environmental scientists, engineers, planners and community groups to manage and conserve natural systems and resources, minimise pollution, remediate and/or rehabilitate sites and trial practical strategies to protect and improve ecosystems.

The qualifications address the skilling needs of technicians and paraprofessionals who:



- collect, analyse and report environmental data
- contribute to the assessment of environmental risks and impacts
- monitor and report environmental/sustainability performance and compliance
- assist in implementation of environmental management plans and related procedures and meeting environmental compliance requirements
- provide information to community members about environmental management and sustainability.

The Environmental Monitoring and Technology units of competency cover skills in areas including measurement and monitoring of environmental factors, collecting and interpreting field data to assess the suitability of land, determining air, soil and water quality, communications, project planning and the use of geographical information systems (GIS) software.

Industry has highlighted that skills and knowledge in the field of Environmental Monitoring and Technology are best developed in a work-based setting which enables access to field work, locations and equipment as relevant to units of competency.

### *Sustainable Operations*

Sustainability is now recognised as a key driver for new directions in manufacturing and other sectors and includes the entire value stream and culture of the organisation. Whilst the foundation principles of lean can support sustainability, it is not just about doing 'more with less' and improved resource and material efficiency.

The Sustainable Operations qualifications and units of competency provide the skills and knowledge to enable organisations to:

- apply a systems-thinking approach to evaluating sustainability performance, including non-financial costs and benefits
- recognise and evaluate emerging concepts and practices for sustainability, including circularity
- audit their own sustainability performance
- develop strategies for improving sustainability performance inside their own operations and with their customers and suppliers
- consider incremental versus radical changes (e.g. improved energy efficiency vs circular economy business model).

The Sustainable Operations units of competency cover technical skills, such as mass balancing and auditing, and skills for developing business models and strategic decision making for sustainability. The units also provide the skills needed to respond to current and new sustainability compliance regimes and environmental standards. While the units are not specific to any one regime, they enable an RTO to provide training related to current and emerging legislative, regulatory and voluntary arrangements across industries.

Industry has identified that the following are critical in determining the areas where the most impact can be achieved in sustainability, including circularity; and many of them have systems thinking as their foundation:

- evaluating the systems-wide impact of sustainability issues and potential improvements.
- measuring, estimating and using indicators (quantifying) to evaluate the current context, improvements and ongoing performance, including consideration of financial and non-financial factors and direct, indirect and intangible factors.
- planning and designing to reduce waste and pollution, retain the value of resources in the system and to regenerate natural systems. Ideally this will be applied in daily activities and decision making through to development of new products and processes and strategic decisions about business models.
- recognising the impact of supply chain decisions on sustainability/circularity outcomes and that this is an area where most businesses can make a real difference.

Industry also highlighted that skills and knowledge in the field of Sustainable Operations are best developed in a work-based setting where the whole organisation is committed to sustainability and/or circularity improvements.

## Regulation and licensing implications

At the time of writing, there are no licensing or other regulatory requirements that apply overall to the MSS Sustainability Training Package qualifications. Where regulatory requirements may apply to individual units, this information is provided in the unit. However, these requirements may vary between jurisdictions and are frequently updated. RTOs should always confirm licensing requirements with the regulator.

## General compliance

The units of competency require that the content of training and assessment reflects current requirements as set by legislation, regulation, standards and codes relevant to the industry. Delivery of training and assessment must also comply with current requirements. While there are some federal requirements that apply to virtually all businesses, there may be requirements that are specific to a sector or to functions within an organisation:

- federal, state and local government environmental standards
- product safety standards
- occupational health and safety regulations.

## Competitive Systems and Practices – compliance requirements

Competitive systems and practices can be applied to most organisations and across many industries. Therefore a wide range of legislation, regulation, standards and codes needs to be considered in the implementation of CSP, as relevant to the sector of the organisation and the type of operations being improved. Examples include but are not limited to:

- Accounting and reporting
- Auditing and reporting
- Business governance, business models
- Cultural/heritage protection
- Emissions and pollutants
- Energy management
- Environmental management/environmental protection
- Facilities - construction, maintenance and services
- Materials safety
- Noise pollution
- Procurement, supply chain, traceability
- Product labelling/rating schemes
- Product lifecycle, recycling and stewardship
- Product packaging
- Product-specific requirements
- Waste management
- Water management
- Work conditions, workplace safety.

## Environmental Monitoring and Technology - compliance requirements

A range of legislation, regulations, standards and codes (and similar) may define requirements that are relevant to environmental monitoring and technology. The requirements may be overtly relevant to environmental monitoring and technology or may cover broad areas where the connection is less apparent; and they may vary depending on the type of activity and the industry in which work is being undertaken. Requirements may be national or may be State/Territory based.

Areas where requirements may be or may become, relevant to environmental monitoring and technology include, but are not limited to:

- Air quality
- Auditing and reporting
- Biodiversity and habitat conservation
- Cultural/heritage protection
- Emissions and pollutants
- Energy management
- Environmental management/environmental protection

- Lifecycle analysis
- Materials safety
- Noise pollution
- Procurement, supply chain, traceability
- Product labelling/rating schemes
- Product lifecycle, recycling and stewardship
- Product packaging
- Sample collection and handling
- Sampling design
- Soil conservation
- Test methods
- Waste management
- Water management
- Work conditions, workplace safety.

## Sustainable Operations - compliance requirements

Concepts and practices for circularity can be applied to most systems within production and the supply chains across industries. Therefore a range of legislation, regulations, standards and codes (and similar) may define requirements that are relevant to circularity, depending on the type of activity and the industry in which it is undertaken. The requirements may be overtly relevant to sustainability or may cover broad areas where the connection to sustainability is less apparent. Requirements may be national or may be State/Territory based.

Areas where requirements may be or may become, relevant to sustainability and/or circularity include, but are not limited to:

- Accounting and reporting
- Business governance, business models
- Carbon net zero
- Customs and export
- Emissions and pollutants
- Energy management
- Environmental management/environmental protection
- Facilities - construction, maintenance and services
- Human rights, slavery
- Lifecycle analysis

- Materials safety
- Procurement, supply chain, traceability
- Product labelling/rating schemes
- Product lifecycle, recycling and stewardship
- Product packaging
- Waste management
- Water management
- Work conditions, workplace safety.

## Compliance with Standards for RTOs

The *Standards for Registered Training Organisations (RTOs) 2015* provides a guide for nationally consistent, high-quality training and assessment services in the vocational education and training (VET) system.

Download the *Standards* from the Australian Skills Quality Authority (ASQA) website [www.asqa.gov.au/about/australias-vet-sector/standards-registered-training-organisations-rtos-2015](http://www.asqa.gov.au/about/australias-vet-sector/standards-registered-training-organisations-rtos-2015).

Trainers and assessors must satisfy the trainer and assessor requirements in the *Standards* and the *National Vocational Education and Training Act 2011*. RTOs must stay aware of any changes to these requirements and ensure that they are compliant at all times.

Requirements for assessors include the prescribed qualification or skill set, vocational expertise at least to the level being assessed, and currency in both assessment and vocational skills. Where an individual does not meet all of these requirements, a co-assessment process may be used.

## Australian Qualifications Framework (AQF)

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the current *Australian Qualifications Framework* and the endorsed training packages within the scope of its registration. An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed training package are met. A Statement of Attainment is issued when an individual has completed one or more units from nationally recognised qualification(s) or courses(s).

See the current edition of the *Australian Qualifications Framework* (2ed, January 2013) available on the AQF website [www.aqf.edu.au](http://www.aqf.edu.au).

## Implementation information

RTOs will need to implement a comprehensive training and assessment strategy for each qualification that they deliver.

This implementation information is provided to assist RTOs to develop their learning and assessment strategies to meet industry and student needs. It includes information on:

- pathways and choosing the appropriate qualification
- mandatory entry requirements
- suitability for Australian Apprenticeships
- the AQF, qualifications and occupational outcomes
- choosing and importing electives
- health, safety and legal implications and considerations
- access and equity and reasonable adjustment
- foundation skills and employability skills
- delivering the training
- conducting assessments.

## Career pathways and choosing the appropriate qualification

The qualifications in this Training Package have been developed to support career pathways for workers. The following table provides details about the pathways into and out of each qualification.

Qualification	Pathways in	Pathways out
<b>Competitive Systems and Practices</b>		
MSS30322 Certificate III in Competitive Systems and Practices	<ul style="list-style-type: none"> <li>• direct entry</li> </ul>	<ul style="list-style-type: none"> <li>• MSS40322 Certificate IV in Competitive Systems and Practices</li> </ul>
MSS40322 Certificate IV in Competitive Systems and Practices	<ul style="list-style-type: none"> <li>• direct entry</li> <li>• MSS30322 Certificate III in Competitive Systems and Practices</li> </ul>	<ul style="list-style-type: none"> <li>• MSS50322 Diploma of Competitive Systems and Practices</li> </ul>
MSS50322 Diploma of Competitive Systems and Practices	<ul style="list-style-type: none"> <li>• direct entry</li> <li>• MSS40322 Certificate IV in Competitive Systems and Practices</li> </ul>	<ul style="list-style-type: none"> <li>• MSS80322 Graduate Certificate in Competitive Systems and Practices</li> </ul>
MSS80322 Graduate Certificate in Competitive Systems and Practices	<ul style="list-style-type: none"> <li>• Certificate IV or higher qualification in competitive systems and practices, management, technical or related discipline</li> <li>• experience in competitive systems and practices at the supervisor, manager or technical specialist level or above</li> </ul>	<ul style="list-style-type: none"> <li>• MSS80422 Graduate Diploma of Competitive Systems and Practices</li> </ul>

Qualification	Pathways in	Pathways out
	<ul style="list-style-type: none"> <li>experience in leadership and management</li> </ul>	
MSS80422 Graduate Diploma of Competitive Systems and Practices	<ul style="list-style-type: none"> <li>Certificate IV or higher qualification in competitive systems and practices, management, technical or related discipline</li> <li>experience in competitive systems and practices at the supervisor, manager or technical specialist level or above</li> <li>experience in leadership and management</li> </ul>	<ul style="list-style-type: none"> <li>various qualifications in the higher education sector</li> </ul>
<b>Sustainable Operations</b>		
MSS40122 Certificate IV in Sustainable Operations	<ul style="list-style-type: none"> <li>direct entry</li> </ul>	<ul style="list-style-type: none"> <li>MSS50122 Diploma of Sustainable Operations</li> </ul>
MSS50122 Diploma of Sustainable Operations	<ul style="list-style-type: none"> <li>direct entry</li> <li>MSS40122 Certificate IV in Sustainable Operations</li> </ul>	<ul style="list-style-type: none"> <li>various qualifications in the higher education sector</li> </ul>
<b>Environmental Monitoring and Technology</b>		
MSS40222 Certificate IV in Environmental Monitoring and Technology	<ul style="list-style-type: none"> <li>direct entry</li> <li>MSL20118 Certificate II in Sampling and Measurement</li> </ul>	<ul style="list-style-type: none"> <li>MSS50222 Diploma of Environmental Monitoring and Technology</li> </ul>
MSS50222 Diploma of Environmental Monitoring and Technology	<ul style="list-style-type: none"> <li>direct entry</li> <li>MSL20118 Certificate II in Sampling and Measurement</li> <li>MSS40222 Certificate IV in Environmental Monitoring and Technology</li> </ul>	<ul style="list-style-type: none"> <li>various qualifications in the higher education sector</li> </ul>

## Qualifications and occupational outcomes

The training package qualifications have been developed to align to job roles in a range of industries and models of work while maintaining the rigour of the AQF qualification types and levels.

Depending on the focus area, the qualifications in the MSS Sustainability training package support occupational outcomes ranging from workers at the operational and trade levels through to technician, manager, leader and specialist levels. These align with Certificate III through to Graduate Diploma in the AQF.

See **Appendix 4: AQF certificate level descriptors, occupational outcomes and qualifications** for full AQF qualification descriptors and an outline of relationship to the MSS qualifications.

## Credit arrangements

At the time of endorsement no national credit arrangements exist for this Training Package.

## Mandatory Entry Requirements

Industry have identified and confirmed minimum requirements for entry into qualifications to ensure that learners and employers can correctly identify pathways that align to their job roles and experience.

Most qualifications in the MSS Training Package allow for direct entry and do not have any mandatory entry requirements. Qualifications with mandatory entry requirements are targeting workers with experience at a senior, advanced or highly technical level who will require advanced knowledge and skills to meet the demands and expectations of those qualifications.

Qualification	Mandatory Entry Requirements
<b>Competitive Systems and Practices</b>	
MSS30322 Certificate III in Competitive Systems and Practices	No entry requirements
MSS40322 Certificate IV in Competitive Systems and Practices	No entry requirements
MSS50322 Diploma of Competitive Systems and Practices	No entry requirements
MSS80322 Graduate Certificate in Competitive Systems and Practices	One or more of the following: <ul style="list-style-type: none"> <li>• Certificate IV or higher qualification in competitive systems and practices, management, technical or related discipline</li> <li>• experience in competitive systems and practices at the supervisor, manager or technical specialist level or above</li> <li>• experience in leadership and management</li> </ul>
MSS80422 Graduate Diploma of Competitive Systems and Practices	One or more of the following: <ul style="list-style-type: none"> <li>• Certificate IV or higher qualification in competitive systems and practices, management, technical or related discipline</li> <li>• experience in competitive systems and practices at the supervisor, manager or technical specialist level or above</li> <li>• experience in leadership and management</li> </ul>
<b>Sustainable Operations</b>	
MSS40122 Certificate IV in Sustainable Operations	No entry requirements
MSS50122 Diploma of Sustainable Operations	No entry requirements



Qualification	Mandatory Entry Requirements
Environmental Monitoring and Technology	
MSS40222 Certificate IV in Environmental Monitoring and Technology	No entry requirements
MSS50222 Diploma of Environmental Monitoring and Technology	No entry requirements

## Suitability for Australian Apprenticeships

Competitive Systems and Practices	
MSS30322 Certificate III in Competitive Systems and Practices	The competitive Systems and Practices qualifications are not suitable for Australian Apprenticeships. These qualifications are typically undertaken in addition to other qualifications or primary work roles to allow graduates to apply specialised knowledge and skills to their existing roles and organisations.
MSS40322 Certificate IV in Competitive Systems and Practices	
MSS50322 Diploma of Competitive Systems and Practices	
MSS80322 Graduate Certificate in Competitive Systems and Practices	
MSS80422 Graduate Diploma of Competitive Systems and Practices	
Sustainable Operations	
MSS40122 Certificate IV in Sustainable Operations	Training programs for this qualification are suitable to be undertaken as part of a formal training contract with an employer under an Australian Apprenticeship arrangement.  However, these qualifications are typically undertaken in addition to other qualifications or primary work roles to allow graduates to apply specialised knowledge and skills to their existing roles and organisations. This may affect the availability of training contracts under Commonwealth and State/Territory policies.
MSS50122 Diploma of Sustainable Operations	
Environmental Monitoring and Technology	
MSS40222 Certificate IV in Environmental Monitoring and Technology	Training programs for this qualification are suitable to be undertaken as part of a formal training contract with an employer under an Australian Apprenticeship arrangement.
MSS50222 Diploma of Environmental Monitoring and Technology	Training programs for this qualification are suitable to be undertaken as part of a formal training contract

	with an employer under an Australian Apprenticeship arrangement.
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## Choosing electives

The elective units of competency listed within the qualifications within the MSS Sustainability Training Package provide for skill development in a range of industry sectors. All qualifications can be customised to focus on specific approaches, methods of operation, student needs and sectors through the selection of listed electives. All qualifications allow for importing of unit/s from other endorsed Training Package qualifications or accredited courses, at a specified minimum AQF level.

### *Elective groups in CSP*

The packaging rules for several Competitive Systems and Practices qualifications use three groups of electives to provide a balance of units of competency. This applies in the Certificate III, Certificate IV and Graduate Diploma qualifications.

The approach is that:

- Group A units have broad systems focus and/or change management, typically with overt interpersonal skills requirements.
- Group B units focus on specific techniques, tools, methods (etc), often with overt technical skills requirements.
- Group C allows for flexibility but is restricted in order to maintain differentiation between qualifications and AQF levels.

## Importing elective units

Where units of competency are to be imported from another endorsed Training Package qualification or accredited course the following must be taken into account:

- the number of imported units allowed in packaging rules is not exceeded
- units must be from an endorsed Training Package qualification or other accredited course and be packaged at the specified AQF level (typically the same level or higher)
- the original unit title and code number must be retained
- units contribute to a valid, industry-supported vocational outcome for the qualification
- any prerequisites specified in the original unit and any specific assessment requirements in the host Training Package are also observed.

## Health, safety and other legislative considerations

The latest version of all legislation, regulations, industry codes of practice and Australian or international standards must be used, or a version specified by the local regulatory authority.

Where the regulatory framework is reflected in workplace policies and procedures to be applied by the candidate, it is not expected that the regulatory requirements will be assessed separately

All operations and training and assessment activities must comply with relevant WHS and environmental management requirements, whether state/territory or federal, and these requirements must not be compromised at any time.

## Foundation skills and employability skills

Foundation Skills are those core or essential skills we need to engage successfully in work and life. The Foundation Skills section of the MSS units of competency has been populated with information aligned to the five core skills of reading, writing, oral communication, numeracy and learning within the Australian Core Skills Framework (ACSF). The information shows the link between the core skills and the requirements of the units.

The Employability Skills framework provides a broader view of skills to support employment with eight skills identified:

- communication
- teamwork
- problem-solving
- initiative and enterprise
- planning and organising
- self-management
- learning
- technology.

Employability Skills summaries have been developed for each qualification in MSS, also incorporating some ACSF skills. The summaries are available at **Appendix 5: Employability Skills in MSS qualifications**.

## Delivering training and assessment

In addition to meeting the requirements of the *Standards for Registered Training Organisations (RTOs) 2015*, training providers should note the following in relation to implementation of the MSS Sustainability Training Package.

## Occupational outcomes

RTOs must meet the requirements of the AQF and ensure that individual students are enrolled in appropriate qualifications. This section provides the AQF qualification descriptor and the [TP Code TP Title] Training Package qualification description. This will assist RTOs in determining the most suitable qualification level for each student.

The statements in the qualifications contain critical information about the intended purpose of the qualification and are necessary to ensure that the occupational outcome associated with the qualifications is clear, and that the qualifications are used for their intended purpose.

Additional information on expected qualification outcomes and industry recognised skills profiles is available in the 'Qualifications and occupational outcomes' section.

## Formal training

All qualifications are competency-based and can be achieved through a formal skills recognition process where substantial industry experience is evident. Where formal training is required, competence will be realised through a combination of on-the-job and off-the-job skills and knowledge development.

## Mode of delivery

Training and assessment for MSS Sustainability units of competency may be delivered face-to-face, online, through workplace training, using distance learning or a mixture of different modes, also called blended delivery.

Candidates can be assessed through skills recognition, on-the-job or off-the-job assessment activities or a combination of these. However, all assessments must comply with:

- the principles of assessment (Table 1.8-1 in the *Standards*)
- the rules of evidence (Table 1.8-2 in the *Standards*)
- all requirements set out in the unit and assessment requirements.

## Volume of learning

The AQF qualification descriptors include the volume of learning. RTOs must comply with this and ensure that students are enrolled in qualifications that are suitable for the needs of the individual and for industry employers. RTOs must also develop and implement training and assessment strategies that are consistent with the AQF to ensure their delivery meets the requirements of the AQF.

The AQF defines the volume of learning allocated to a qualification, expressed in years. The volume of learning is one of the dimensions that is used to define the complexity of a qualification. This includes all teaching, learning and assessment activities that are required to be undertaken by a typical student to achieve the learning outcomes. These activities include guided learning (classes, lectures, tutorials, and online or self-paced study), individual study, research, practice, learning activities in the workplace, and assessment activities.

The amount of training provided by an RTO is part of the overall volume of learning and relates primarily to formal activities (including classes and other activities, as well as workplace learning).

RTOs must consider the need to allow learners to reflect on and absorb knowledge, to practise the skills in different contexts, and to learn to apply the skills and knowledge in the varied environments of workplaces before being assessed. However, the amount of training should be defined with consideration of factors such as:

- the structure and content of the program and whether it is a full qualification
- the requirements within the relevant training product

- the AQF volume of learning
- the learner’s qualifications, skills and experience
- the mode of delivery and how it affects the training/assessment needed
- workplace arrangements.

## Assessment guidelines

The assessment requirements in the units of competency outline essential evidence to be gathered an assessment but they do not replace the requirements set out in the elements and performance criteria in the unit.

Assessment methods must be relevant to and comply with all of the requirements of the unit and associated assessment requirements.

The assessment requirements do not define the assessment process and are not assessment tools. The performance evidence and knowledge evidence requirements should be analysed to identify logical/practical groupings that will help in designing assessment methods and assessment tools.

Note that in competency-based training and assessment the application of knowledge to achieve required work outcomes is critical. Evidence of knowledge may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept in each case).

## *Workplace assessment*

Where assessment occurs in the workplace:

- take into account that the person being assessed may have had little experience of structured training and assessment. Carefully explain the process of making judgements against the standards and make the candidate feel as relaxed as possible, consistent with the needs of the unit
- consult on the assessment process with the parties involved
- the assessment should take place over a reasonable length of time so that the candidate has the opportunity to demonstrate work responsibility and contingency management
- third-party reports of workplace performance, if available, may be useful; however, the third party must have relevant experience on which to base their report
- consider the other staff in the workplace likely to be affected by the process. All staff directly or indirectly involved in the process should be briefed on the factors that will impact on them, such as duration or changes in work routine
- ensure that assessment is as compatible as possible with the normal pattern of work and causes minimal disruption. If the process involves candidates being away from their work area for a period of time, then arrangements should be made with their immediate supervisor to cover their duties for that period of time.

## *Simulation*

Simulation may be appropriate where safety/environmental risk, production processes and/or cost factors prevent workplace evidence being generated. This might be the case, for example, where WHS competencies must be achieved prior to performing the work or where operational activities are not performed regularly (for example, process shutdown).

Where off-the-job assessment is used the RTO must design realistic workplace simulations that cover the range of conditions, challenges and contingencies found in an operational workplace as relevant to the unit being assessed.

Where assessment is occurring out of the workplace, it is important to ensure that:

- the assessment takes place in a situation as close as possible to workplace reality
- all aspects of competency are assessed
- the assessment takes place over a reasonable length of time so that the candidate has the opportunity to demonstrate work responsibility and contingency management
- third-party reports of workplace performance, if available, may be useful; however, the third party must have relevant experience on which to base their report
- documents used in assessment closely reflect workplace reality.

## Evidence guidelines

### *Judgement of competence*

Judgement of competence must be based on holistic review of all of the evidence against the unit of competency and assessment requirements. Assessment must meet the Principles of Assessment and the Rules of Evidence.

The design of assessment needs to ensure that the following dimensions of competency are covered:

- task skills (performance of individual tasks)
- task management skills (managing a number of different tasks within the job)
- contingency management skills (responding to problems, breakdowns and changes in routine)
- job/role environment skills (dealing with the responsibilities and expectations of the workplace).

Evidence-gathering methods must be gender and culturally inclusive and take into account the language, literacy and numeracy skills of the candidate and requirements of the unit and the workplace.

Assessment design should also consider:

- incorporating a range of assessment techniques
- integrating the assessment of units related to the performance of 'whole of work' tasks, roles or functions
- using a holistic approach that combines knowledge, understanding, problem-solving, technical skills and applications to new situations into the assessment process
- assessing in the workplace (wherever possible), using familiar skills and materials
- ensuring that the amount and level of reading and writing is commensurate with what is required to do the job competently
- using the language and terms of the job and the workplace
- encouraging the candidate to ask questions to clarify instructions
- providing clarification of purpose and process of assessment
- identifying and addressing any cultural and gender issues that may arise.

The following resources provide advice on designing assessment tools:

- *Guide to developing assessment tools* (ASQA, 2015;  
<https://www.asqa.gov.au/resources/guides/guide-developing-assessment-tools>)
- A guide to developing training package assessment materials [kit] (ANTA, 2001:  
<https://trove.nla.gov.au/work/16529162?selectedversion=NBD24099286f>)
- *Disability Standards for Education 2005* (Australian Government,  
<https://www.comlaw.gov.au/Details/F2005L00767>)

## Access and equity

A learner's access to the training and assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this training package. Training and assessment must be bias-free.

## Reasonable adjustments

Under the *Disability Standards for Education 2005*, education providers must make reasonable adjustments for people with disability to the maximum extent that those adjustments do not cause that provider unjustifiable hardship. While 'reasonable adjustment' and 'unjustifiable hardship' are different concepts and involve different considerations, they both seek to strike a balance between the interests of education providers and the interests of candidates with and without disability. The Disability Standards and guidelines for their implementation can be downloaded at <http://www.comlaw.gov.au/Details/F2005L00767>.

An adjustment is any measure or action that a candidate requires because of their disability, and which has the effect of assisting them to access and participate in education and training on the same basis as those without a disability. An adjustment is reasonable if it achieves this purpose while taking into account factors such as the nature of the candidate's disability, their views, the potential effect of the adjustment on the candidate and others who might be affected, and the costs and benefits of making the adjustment.

When assessing whether an adjustment is reasonable, a training provider is required to maintain the academic requirements of a unit of competency that are inherent or essential to its outcome. There may be more than one adjustment that is reasonable in a given set of circumstances; education providers are required to make adjustments that are reasonable and that do not cause them unjustifiable hardship.

Adjustments must not diminish the rigour of the unit being assessed.

## Resource and equipment requirements

Details of resources and equipment requirements are clearly identified in the Assessment Conditions for each unit of competency.



## Appendices

### Appendix 1: MSS qualifications mapping

#### *Mapping of qualifications: MSS Release 4.2 to Release 5.0*

##### Determination of equivalence of qualifications

A superseding qualification is equivalent when the occupational outcome, and AQF alignment, in the updated qualification is the same as its predecessor. The scope of the qualification has not changed where similar skills and knowledge are required for the occupational outcome, this may include changes to core units and packaging rules.

A superseding qualification is not equivalent when the occupational outcome in the updated qualification is different from its predecessor. The scope of the qualification has changed to broaden its application to different contexts, a specialisation has been added and/or entry requirements have been removed or added.

Key: E = Equivalent, N = Non-equivalent

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Qual Code	Qual Title	Qual Code	Qual Title		
MSS20316	Certificate II in Competitive Systems and Practices	N/A	N/A	Deleted	-
MSS30316	Certificate III in Competitive Systems and Practices	MSS30322	Certificate III in Competitive Systems and Practices	Qualification code changed. Qualification description changed. Unit codes and titles updated. Packaging rules changed. Core units changed. Elective banks changed. Workplace outcome changed.	N
MSS40118	Certificate IV in Sustainable Operations	MSS40122	Certificate IV in Sustainable Operations	Qualification code changed. Description changed. Packaging rules changed. Elective banks changed. Unit codes and titles updated. Workplace outcome changed.	N
MSS40218	Certificate IV in Environmental Monitoring and Technology	MSS40222	Certificate IV in Environmental Monitoring and Technology	Qualification code changed. Description changed. Packaging rules changed. Elective banks changed. Unit codes and titles updated.	E
MSS40316	Certificate IV in Competitive Systems and Practices	MSS40322	Certificate IV in Competitive Systems and Practices	Qualification code changed. Qualification description changed. Unit codes and titles updated. Packaging rules changed. Core units	N

				changed. Elective banks changed. Workplace outcome changed.	
MSS50118	Diploma of Sustainable Operations	MSS50122	Diploma of Sustainable Operations	Qualification code changed. Description changed. Packaging rules changed. Elective banks changed. Unit codes and titles updated. Workplace outcome changed.	N
MSS50218	Diploma of Environmental Monitoring and Technology	MSS50222	Diploma of Environmental Monitoring and Technology	Qualification code changed. Description changed. Packaging rules changed. Elective banks changed. Unit codes and titles updated.	E
MSS50316	Diploma of Competitive Systems and Practices	MSS50322	Diploma of Competitive Systems and Practices	Qualification code changed. Qualification description changed. Unit codes and titles updated. Packaging rules changed. Core units changed. Elective banks changed. Workplace outcome changed.	N
MSS60316	Advanced Diploma of Competitive Systems and Practices	MSS60316	Advanced Diploma of Competitive Systems and Practices	Deleted	-
MSS80316	Graduate Certificate in Competitive Systems and Practices	MSS80322	Graduate Certificate in Competitive Systems and Practices	Qualification code changed. Qualification description changed. Entry requirements changed. Packaging rules changed. Elective banks changed. Unit codes and names updated.	E
MSS80416	Graduate Diploma of Competitive Systems and Practices	MSS80422	Graduate Diploma of Competitive Systems and Practices	Qualification code changed. Qualification description changed. Entry requirements changed. Packaging rules changed. Elective banks changed. Unit codes and titles updated.	E

### Mapping of qualifications: MSS Release 4.1 to MSS Release 4.2

MSS Sustainability Training Package Release 4.1	MSS Sustainability Training Package Release 4.2	Comments	E: Equivalent N: Not Equivalent
MSS40218 Certificate IV in Environmental Monitoring and Technology (Release 2)	MSS40218 Certificate IV in Environmental Monitoring and Technology (Release 3)	HLTAID003 updated to HLTAID0011 in elective bank.	E
MSS50218 Diploma of Environmental Monitoring and Technology (Release 2)	MSS50218 Diploma of Environmental Monitoring and Technology (Release 3)	HLTAID003 updated to HLTAID0011 in elective bank.	E

### Mapping of qualifications: MSS Release 4.0 to MSS Release 4.1

MSS Sustainability Training Package Release 4.0	MSS Sustainability Training Package Release 4.1	Comments	E: Equivalent N: Not Equivalent
MSS40118 Certificate IV in Sustainable Operations (Release 3)	MSS40118 Certificate IV in Sustainable Operations (Release 4)	2 elective units deleted.	E
MSS40218 Certificate IV in Environmental Monitoring and Technology (Release 2)	MSS40218 Certificate IV in Environmental Monitoring and Technology (Release 3)	6 elective units deleted.	E
MSS50218 Diploma of Environmental Monitoring and Technology (Release 2)	MSS50218 Diploma of Environmental Monitoring and Technology (Release 3)	6 elective units deleted.	E
MSS50118 Diploma of Sustainable Operations (Release 3)	MSS50118 Diploma of Sustainable Operations (Release 4)	5 elective units deleted.	E
MSS80218 Graduate Certificate in Environmental Management		Deleted	
MSS80118 Graduate Certificate in Sustainable Operations		Deleted	

No further qualifications were added, deleted or changed in the update from Release 4.0 to Release 4.1.

## Mapping of qualifications: MSS Release 3.0 to MSS Release 4.0

MSS Sustainability Training Package Release 3.0	MSS Sustainability Training Package Release 4.0	Comments	E: Equivalent N: Not Equivalent
MSS40118 Certificate IV in Sustainable Operations (Release 2)	MSS40118 Certificate IV in Sustainable Operations (Release 3)	Elective units updated to include new and revised units addressing energy management.	E
MSS40316 Certificate IV in Competitive Systems and Practices (Release 3)	MSS40316 Certificate IV in Competitive Systems and Practices (Release 4)	Elective units updated to include new and revised units addressing energy management.	E
MSS50118 Diploma of Sustainable Operations (Release 2)	MSS50118 Diploma of Sustainable Operations (Release 3)	Elective units updated to include new and revised units addressing energy management.	E
MSS50316 Diploma of Competitive Systems and Practices (Release 3)	MSS50316 Diploma of Competitive Systems and Practices (Release 4)	Elective units updated to include new and revised units addressing energy management.	E
MSS60316 Advanced Diploma of Competitive Systems and Practices (Release 3)	MSS60316 Advanced Diploma of Competitive Systems and Practices (Release 4)	Elective units updated to include new and revised units addressing energy management.	E
MSS80316 Graduate Certificate in Competitive Systems and Practices (Release 3)	MSS80316 Graduate Certificate in Competitive Systems and Practices (Release 4)	Elective units updated to include new and revised units addressing energy management.	E

No further qualifications were added, deleted or changed in the update from Release 3.0 to Release 4.0.

## Mapping of qualifications: MSS Release 2.0 to MSS Release 3.0

MSS Sustainability Training Package Release 2.0	MSS Sustainability Training Package Release 3.0	Comments	E: Equivalent N: Not Equivalent
MSS30316 Certificate III in Competitive Systems and Practices (Release 2)	MSS30316 Certificate III in Competitive Systems and Practices (Release 3)	Changes to elective list. Unit codes, names and pre-requisites updated. Removal of MSS403013 from electives.	E
MSS40118 Certificate IV in Sustainable Operations (Release 2)	MSS40118 Certificate IV in Sustainable Operations (Release 1)	Unit codes updated. Removal of MSS403013 from electives.	E
MSS40316 Certificate IV in Competitive Systems and Practices (Release 2)	MSS40316 Certificate IV in Competitive Systems and Practices (Release 3)	Qualification template updated. Qualification description simplified. Unit codes, names and pre-requisites updated. Removal of MSS403013 from electives.	E
MSS50118 Diploma of Sustainable Operations (Release 1)	MSS50118 Diploma of Sustainable Operations (Release 2)	Changes to elective list. Unit codes, names and pre-requisites updated.	E
MSS50316 Diploma of Competitive Systems and Practices (Release 2)	MSS50316 Diploma of Competitive Systems and Practices (Release 3)	Qualification template updated. Qualification description simplified. Unit codes, names and pre-requisites updated. Removal of MSS403013 from electives.	E
MSS60316 Advanced Diploma of Competitive Systems and Practices (Release 2)	MSS60316 Advanced Diploma of Competitive Systems and Practices (Release 3)	Qualification template updated. Qualification description simplified. Unit codes, names and pre-requisites updated. Removal of MSS403013 from electives.	E

MSS Sustainability Training Package Release 2.0	MSS Sustainability Training Package Release 3.0	Comments	E: Equivalent N: Not Equivalent
MSS80118 Graduate Certificate in Sustainable Operations (Release 1)	MSS80118 Graduate Certificate in Sustainable Operations (Release 2)	Clarification of entry requirements outstanding from Release 2. unit codes and names updated.	E
MSS80218 Graduate Certificate in Environmental Management (Release 1)	MSS80218 Graduate Certificate in Environmental Management (Release 2)	Unit codes and prerequisites updated.	E
MSS80316 Graduate Certificate in Competitive Systems and Practices (Release 2)	MSS80316 Graduate Certificate in Competitive Systems and Practices (Release 3)	Qualification template updated. Qualification description simplified. Unit codes, names and pre-requisites updated. Entry requirements clarified/simplified.	E
MSS80416 Graduate Diploma of Competitive Systems and Practices (Release 2)	MSS80416 Graduate Diploma of Competitive Systems and Practices (Release 3)	Changes to elective list. Unit codes, names and pre-requisites updated.	E

No further qualifications were added, deleted or changed in the update from Release 2.0 to Release 3.0.

## Appendix 2: MSS units of competency mapping

### *Mapping of MSS units from Release 4.2 to Release 5.0*

#### Determination of equivalence of units of competency

A superseding unit is equivalent when its workplace outcome in the updated unit is the same as its predecessor. The scope of the unit has not changed where any/all of the following have been applied:

- Removal of duplication and superfluous information
- Clarification and/or strengthening of the intent of unit
- Clearer articulation of implied requirements, for example to make Performance Criteria 'assessable'
- Improved language to describe the work task more explicitly.

A superseding unit is not equivalent when the workplace outcome in the updated unit is different from its predecessor. The scope of the unit has changed (e.g. to broaden its application to different contexts), substantive requirements have been removed or added and/or prerequisite unit requirements have changed.

Key: E = Equivalent, N = Non-equivalent

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS014008	Improve sustainability through readily implementable change	MSS014015	Improve sustainability through readily implementable change	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS014009	Evaluate sustainability impact of a work or process area	MSS014016	Evaluate sustainability impact from a work area or process	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS014014	Implement social sustainability in work practices	MSS014017	Implement social sustainability in work practices	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				Requirements changed. Workplace outcome changed.	
NA	NA	MSS014018	Apply circularity design thinking to all work streams	New unit	NA
MSS014011	Facilitate team to develop and implement sustainability strategies	MSS014019	Facilitate team engagement with sustainability	Unit title changed. Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS014010	Optimise sustainability of a process or work area	MSS014020	Optimise sustainability performance of a work area or process	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015011	Conduct a sustainability energy audit	MSS015040	Conduct a sustainability energy audit	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Rang of Conditions removed. Assessment Requirements changed.	E
MSS015020	Facilitate an energy audit	NA	NA	Deleted	NA
MSS015021	Measure and report carbon footprint of a product or product class	MSS015042	Measure and report carbon footprint	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015022	Develop strategies for more sustainable use of resources	MSS015043	Develop strategies for more sustainable use of resources	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N



MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS015023	Design sustainable product or process	MSS015044	Design sustainable product or process	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015024	Develop required sustainability reports	MSS015045	Develop required sustainability reports	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015025	Develop a business case for sustainability improvements	MSS015046	Develop a business case for sustainability improvements	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015026	Develop strategic sustainability plans	MSS015047	Develop strategic sustainability plans	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015027	Implement sustainability plans	MSS015048	Implement sustainability plans	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Workplace outcome changed.	N
MSS015028	Conduct a sustainable water use audit	MSS015049	Conduct a sustainable water use audit	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015030	Conduct an emissions audit	MSS015050	Conduct an emissions audit	Unit code changed. Application changed. Elements changed. Performance Criteria changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	
MSS015035	Report to Global Reporting Initiative Standards	NA	NA	Merged into MSS015045 Develop required sustainability reports	E
MSS015037	Develop regulated sustainability reports	MSS015052	Develop regulated sustainability reports	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS015039	Develop response to corporate social responsibility	NA	NA	Deleted	NA
NA	NA	MSS015054	Lead circular economy initiatives in the supply chain	New unit	NA
MSS017009	Analyse and determine organisational risk areas in sustainability	NA	NA	Deleted	NA
MSS017010	Determine process loss through mass or energy balancing	NA	NA	Deleted	NA
MSS017011	Identify and respond to external sustainability factors for an organisation	NA	NA	Deleted	NA
MSS017012	Lead sustainable strategy deployment	MSS017020	Lead sustainability	Unit code changed. Application changed. Elements changed. Performance Criteria changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
			strategy deployment	Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	
NA	NA	MSS017021	Set strategic direction for circularity	New unit	NA
NA	NA	MSS017022	Establish systemic supports for circularity	New unit	NA
NA	NA	MSS017023	Establish collaborative business arrangements	New unit	NA
MSS024013	Work and communicate effectively as an environmental technician	MSS024025	Work and communicate effectively as an environmental technician	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS024014	Implement environmental management plans and procedures	MSS024026	Apply environmental management procedures	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS024015	Apply an understanding of environmental principles to a site	MSS024027	Participate in environmental field work	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS024016	Process and present environmental data	MSS024028	Process and present environmental data	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS024017	Collect spatial and discrete environmental data	MSS024029	Collect spatial and discrete environmental data	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS024018	Perform sampling and testing of water	MSS024030	Perform sampling and testing of water	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS024019	Collect and evaluate meteorological data	MSS024031	Collect and evaluate meteorological data	Unit code changed. Application changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS024020	Recognise common geological landforms and samples	MSS024032	Document simple geological information for a site	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS024022	Perform environmental biological techniques	MSS024033	Identify environmentally significant organisms	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS024023	Navigate in urban, regional and remote areas	MSS024034	Navigate in urban, regional and remote areas	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS024024	Undertake simple environmental project activities	NA	NA	Deleted	NA
MSS025005	Produce site maps	MSS025024	Produce site maps	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				Assessment Requirements changed.	
MSS025008	Monitor and evaluate noise	MSS025025	Monitor and evaluate noise	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS025009	Perform sampling and testing of air	MSS025026	Perform sampling and testing of air	Unit code changed. Elements changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS025012	Perform environmental microbiological tests	NA	NA	Deleted	NA
MSS025013	Assist with assessing and monitoring wetlands	MSS025028	Assist with assessing and monitoring wetlands	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS025014	Perform sampling and testing of contaminated sites	MSS025029	Perform sampling and testing for site contamination	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS025017	Assist with assessing site environmental indicators	MSS025030	Assist with assessing site environmental indicators	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS025018	Assess the environmental	MSS025031	Assess the environmental	Unit code changed. Application changed. Elements changed.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
	risk and impact of a project activity or process		risk and impact of a project activity or process	Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	
MSS025019	Report environmental data	MSS025032	Report environmental data	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. S	E
MSS025020	Provide environmental information to customers	MSS025033	Provide environmental information to customers	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS025021	Collect and evaluate groundwater data	MSS025034	Collect and evaluate groundwater data	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS025022	Perform sampling and testing of soils	MSS025035	Perform sampling and testing of soils	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS025023	Plan and conduct environmental project work	MSS025036	Plan and conduct environmental project work	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS027013	Coordinate environmental management activities	MSS027025	Coordinate environmental management activities	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS027014	Apply environmental legislation, codes and standards	MSS027026	Implement environmental legislation, codes and standards	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS027015	Provide environmental advice to clients	NA	NA	Deleted	NA
MSS027017	Contribute to environmental decision making	NA	NA	Deleted	NA
MSS027018	Undertake complex environmental project work	NA	NA	Deleted	NA
MSS402001	Apply competitive systems and practices	MSS402003	Apply competitive systems and practices	Unit code changed. Application changed. Elements changed. Performance criteria changed. Foundation Skills changed. Range of Conditions removed. Assessment requirements changed.	E
MSS402002	Sustain process improvements	MSS402004	Sustain process improvements	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402010	Manage the impact of change on own work	MSS402011	Manage the impact of change on own work	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills changed. Range of Conditions removed. Assessment Requirements changed.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS402020	Apply quick changeover procedures	MSS402022	Apply quick changeover procedures	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402021	Apply Just in Time procedures	MSS402023	Apply Just in Time procedures	Unit code changed. Application changed. Performance Criteria changed. Range of Conditions removed. Foundation Skills populated. Assessment Requirements changed.	E
MSS402031	Interpret product costs in terms of customer requirements	MSS402032	Interpret cost and waste in terms of customer value	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Conditions changed.	E
MSS402040	Apply 5S procedures	MSS402042	Apply 5S procedures	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402041	Apply 5S in an office	N/A	N/A	Merged with MSS402040 into MSS402042	E
MSS402050	Monitor process capability	MSS402054	Monitor process capability	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402051	Apply quality standards	MSS402055	Apply quality standards	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E



MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS402052	Implement continuous improvements based on standardised work practices	MSS402056	Apply and improve standardised work practices	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402053	Participate in breakthrough improvements in an office	MSS402057	Participate in breakthrough improvements	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome has changed.	N
MSS402061	Use SCADA systems in operations	MSS402062	Use SCADA systems in operations	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402080	Undertake root cause analysis	MSS402084	Undertake root cause analysis	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402081	Contribute to the application of a proactive maintenance strategy	MSS402085	Contribute to the application of a proactive maintenance strategy	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS402082	Apply cost factors to work practices	MSS402087	Apply cost factors to work practices	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS402083	Use planning software systems in operations	MSS402086	Use planning software systems in operations	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS403001	Review competitive systems and practices	MSS403003	Contribute to improvements in competitive systems and practices	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
N/A	N/A	MSS403004	Contribute to Agile work practices	New unit	-
MSS403005	Facilitate use of a Balanced Scorecard for performance improvement	MSS403008	Facilitate use of a Balanced Scorecard for performance improvement	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment requirements changed.	E
MSS403006	Facilitate implementation or review of competitive systems and practices in an office	MSS403009	Facilitate implementation of competitive systems and practices in a service environment	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS403010	Facilitate change in an organisation implementing competitive systems and practices	MSS403012	Facilitate change in a competitive systems and practices environment	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS403011	Facilitate implementation of competitive	MSS403014	Facilitate team engagement with competitive	Unit code changed. Unit title changed. Application changed. Performance Criteria changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
	systems and practices		systems and practices	Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	
MSS403021	Facilitate a Just in Time system	MSS403022	Facilitate a Just in Time system	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS403023	Monitor a levelled pull system of operations	MSS403025	Monitor a levelled pull system of operations	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	N
MSS403024	Work within a constrained process	MSS403026	Work within a constrained process	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS403032	Analyse manual handling processes	MSS403031	Analyse and improve manual handling processes	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS403034	Organise products into groups	MSS403036	Identify product groups to inform improvement priorities	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS403035	Implement the visual workplace	MSS403037	Implement the visual workplace	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS403039	Facilitate and improve 5S in an office	N/A	N/A	Merged with MSS403040 into MSS403045	N
MSS403040	Facilitate and improve implementation of 5S	MSS403045	Facilitate and improve 5S	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS403042	Facilitate mistake proofing in an office	N/A	N/A	Merged with MSS403087 into unit MSS404051	N
MSS403043	Facilitate breakthrough improvements in an office	N/A	N/A	Merged with MSS403054 into unit MSS403058	E
MSS403052	Map an office value stream	MSS403056	Map an internal value stream	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS403053	Map an operational process	MSS403057	Map an operational process	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS403054	Facilitate breakthrough improvements	MSS403058	Facilitate breakthrough improvements	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS403055	Facilitate continuous improvement through the use of standardised procedures and practices	MSS403059	Facilitate continuous improvement through the use of standardised procedures and practices	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills changed. Assessment Requirements changed. Workplace outcome changed.	N
MSS403084	Improve changeovers	MSS403080	Improve changeovers	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed.	E
MSS403085	Ensure process improvements are sustained	MSS403081	Ensure process improvements are sustained	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills section populated. Assessment Requirements changed.	E
MSS403086	Improve cost factors in work practices	MSS403082	Improve cost factors in work practices	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
N/A	N/A	MSS404001	Lead Agile team processes	New unit	-
MSS403087	Mistake proof an operational process	MSS404051	Mistake proof a process	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS404053	Use DMAIC techniques	MSS404055	Use DMAIC techniques	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				Range of Conditions removed. Assessment Requirements changed.	
MSS404054	Apply statistics to operational processes	MSS404056	Apply statistics to operational processes	Unit code changed. Application changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS404060	Facilitate the use of planning software systems in a work area or team	MSS404062	Facilitate the use of planning software systems in a work area or team	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS404061	Facilitate the use of SCADA systems in a team or work area	MSS404063	Facilitate the use of SCADA systems in a team or work area	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS404084	Undertake process capability improvements	MSS404080	Undertake process capability improvements	Unit code changed. Application changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS404085	Undertake proactive maintenance analyses	MSS404088	Undertake proactive maintenance analyses	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS404086	Assist in implementing a proactive maintenance strategy	MSS404089	Assist in implementing a proactive maintenance strategy	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS404087	Support proactive maintenance	MSS404090	Support proactive maintenance	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS405001	Develop competitive systems and	MSS405000	Develop competitive systems and	Unit code changed. Unit title changed. Application changed. Elements changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
	practices for an organisation		practices for operational objectives	Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	
MSS405004	Develop business plans in an organisation implementing competitive systems and practices	MSS405017	Develop business plans in an organisation implementing competitive systems and practices	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405005	Manage competitive systems and practices responding to individual and unique customer orders	MSS405018	Implement competitive systems and practices in a one-off or small batch environment	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405006	Develop a Balanced Scorecard	MSS405019	Develop a Balanced Scorecard	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed.	E
MSS405007	Introduce competitive systems and practices to a small or medium enterprise	N/A	N/A	Merged with MSS405001 into MSS405000	N
MSS405008	Analyse and map a value stream	MSS405025	Analyse and map a value stream	Unit code changed. Application changed. Foundations Skills populated. Performance criteria changed. Assessment requirements changed.	E
MSS405009	Manage a value stream	MSS405026	Manage a value stream	Unit code changed. Application changed. Elements changed. Performance criteria changed. Foundation skills populated.	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				Assessment requirements changed.	
MSS405013	Facilitate holistic culture improvement in an organisation	MSS405027	Facilitate a competitive systems and practice culture in an organisation	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405014	Develop a communications strategy to support operations	MSS405028	Develop a communications strategy to support operations	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS405015	Manage relationships with non-customer external organisations	MSS405045	Manage relationships with non-customer external organisations	Unit code changed. Application changed. Performance criteria changed. Assessment requirements changed. Workplace outcome changed.	N
MSS405016	Manage workplace learning	MSS405046	Manage workplace learning	Unit code changed. Application changed. Elements changed. Performance criteria changed. Assessment requirements changed. Workplace outcome changed.	N
MSS405020	Develop quick changeover procedures	MSS405029	Develop quick changeover procedures	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405021	Develop a Just in Time system	MSS405034	Develop a Just in Time system	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Range of Conditions removed. Foundation Skills populated. Assessment Requirements	N



MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				changed. Workplace outcome changed.	
MSS405022	Design a process layout	MSS405035	Design a process layout	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS405023	Develop a levelled pull system for operations and processes	N/A	N/A	Merged with MSS405033 into MSS405039	N
MSS405024	Apply the theory of constraints	MSS405037	Facilitate application of theory of constraints	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405030	Optimise cost of a product or service	MSS405038	Optimise process costs	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS405031	Undertake value analysis of product or process costs in terms of customer requirements	MSS405047	Undertake analysis of cost and waste in terms of customer value	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS405032	Analyse cost implications of maintenance	N/A	N/A	Merged with MSS405081 into MSS405081	E
MSS405033	Optimise office systems to deliver to customer demand	MSS405039	Implement and optimise levelled pull system	Unit code changed. Unit title changed. Application changed. Performance criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS405040	Manage 5S system in an organisation	MSS405042	Manage 5S system in an organisation	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405041	Implement improvement systems in an organisation	MSS405043	Implement improvement systems in an organisation	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
N/A	N/A	MSS405044	Facilitate Agile projects	New unit	-
MSS405052	Design an experiment	MSS405057	Design an experiment	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS405053	Manage application of six sigma for process control and improvement	MSS405055	Manage application of six sigma for process control and improvement	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS405054	Determine and improve process capability	MSS405056	Use three or six sigma processes to determine and improve process capability	Unit code changed. Unit title changed. Application changed. Performance criteria changed. Foundation Skills populated. Assessment requirements changed.	E
MSS405063	Develop the application of enterprise control systems in an organisation	MSS405065	Develop the application of enterprise control systems in an organisation	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS405064	Determine and establish information collection requirements and processes	MSS405066	Establish data collection and processing protocols	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS405075	Facilitate the development of a new product	MSS405076	Facilitate the development of a new product	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405081	Develop a proactive maintenance strategy	MSS405077	Develop a proactive maintenance strategy	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS405087	Investigate energy management as a business issue	MSS405087	Investigate energy management as a business issue	No changes	E
MSS405088	Plan, implement and monitor energy management	MSS405088	Plan, implement and monitor energy management	No changes	E
MSS405089	Develop a business case for	MSS405089	Develop a business case for	No changes	E

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
	improved energy management		improved energy management		
MSS405082	Adapt a proactive maintenance strategy to the process operations sector	MSS405090	Adapt a proactive maintenance strategy to the process operations sector	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS405083	Adapt a proactive maintenance strategy for a seasonal or cyclical business	MSS405091	Adapt a proactive maintenance strategy for a seasonal or cyclical business	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS405084	Manage people relationships	MSS405078	Lead and manage people within competitive systems and practices	Unit code changed. Unit title changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of conditions removed. Assessment requirements changed. Workplace outcome changed.	N
MSS405085	Develop a documentation control strategy for an organisation	N/A	N/A	Deleted	-
MSS407003	Analyse process changes	MSS407023	Quantitatively analyse impact of process changes	Unit code changes. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS407008	Capture learning from daily activities in an organisation	N/A	N/A	Merged with MSS405016 into MSS405046 Merged with MSS408005 into MSS408011	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
MSS407010	Improve visual management in the workplace	MSS407029	Improve visual management in the workplace	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS407011	Manage benchmarking studies	MSS407030	Manage benchmarking studies	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed.	E
MSS407014	Prepare for and implement change	MSS407024	Prepare for and implement change	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS407015	Build relationships between teams in an operations environment	MSS407025	Build internal relationships to support competitive systems and practices	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS407016	Lead a process to determine and solve root cause for a complex problem	MSS407026	Lead a process to determine and solve root cause for a complex problem	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS407017	Review continuous improvement processes	MSS407031	Review continuous improvement processes	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS407018	Review operations	N/A	N/A	Merged with MSS408001 and MSS408002 into MSS408015	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
	practice tools and techniques				
MSS407019	Facilitate improvements in the internal value stream	MSS407032	Facilitate improvements in the internal value stream	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS407020	Undertake a qualitative review of a process change	MSS407033	Qualitatively review process changes	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed. Workplace outcome changed.	N
MSS407021	Respond to a major non-conformance	MSS407034	Respond to a major non-conformance	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements changed.	E
MSS407022	Facilitate improvements in the external value stream	N/A	N/A	Merged with MSS408004 into MSS408016	N
MSS408001	Develop the competitive systems and practices approach	MSS408015	Develop the competitive systems and practices approach	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS408002	Audit the use of competitive tools	N/A	N/A	Merged into MSS408015	N
MSS408004	Develop the value stream	MSS408016	Develop the value stream	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed.	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				Assessment Requirements changed. Workplace outcome changed.	
MSS408005	Develop knowledge systems and learning processes for an organisation	MSS408011	Develop knowledge systems and learning processes for an organisation	Unit code changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS408006	Develop and refine systems for improvement in operations	MSS408017	Analyse and refine improvement systems	Unit code changed. Unit title changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed	E
MSS408007	Develop problem solving capability of an organisation	MSS408012	Develop problem solving capability of an organisation	Unit code changed. Application changed. Performance Criteria changed. Foundation Skills populated. Range of Conditions removed. Assessment Requirements changed. Workplace outcome changed.	N
MSS408009	Develop models of future state operations practice	MSS408013	Develop best practice model for future state operations	Unit code changed. Unit title changed. Application changed. Foundation skills populated. Assessment requirements changed. Workplace outcome changed.	N
N/A	N/A	MSS408014	Establish systemic supports for competitive systems and practices	New unit	-
MSS408010	Analyse data for relevance to organisational learning	MSS408018	Analyse data to determine organisational learning	Unit code changed. Unit title changed. Application changed. Elements changed. Performance Criteria changed. Foundation Skills populated. Assessment Requirements	N

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Comments	Equiv. Status
Unit Code	Unit Title	Unit Code	Unit Title		
				changed. Workplace outcome changed.	

### *Mapping of units of competency: MSS Release 4.1 to MSS Release 4.2*

No units were updated as part of MSS Release 4.2.

### *Mapping of units of competency: MSS Release 4.0 to MSS Release 4.1*

MSS Sustainability Training Package Release 4.0		MSS Sustainability Training Package Release 4.1			
Code	Title	Code	Title	Comments	E/ N
MSS014012	Apply proactive maintenance strategies to sustainability			Deleted	
MSS014013	Contribute to sustainability related audits			Deleted	
MSS015031	Conduct a sustainability related transport audit			Deleted	
MSS015033	Implement and monitor reengineering for sustainability			Deleted	
MSS015034	Inform and educate organisation and community representatives on sustainability issues			Deleted	



MSS Sustainability Training Package Release 4.0		MSS Sustainability Training Package Release 4.1			
Code	Title	Code	Title	Comments	E/ N
MSS015036	Develop response to sustainability related regulation			Deleted	
MSS015038	Establish and review metrics for social sustainability			Deleted	
MSS017013	Manage a major sustainability non-conformance			Deleted	
MSS017014	Identify and improve sustainability interactions with the community			Deleted	
MSS017015	Design for sustainability			Deleted	
MSS017016	Develop a proactive social sustainability strategy			Deleted	
MSS024021	Assist with assessing and monitoring stormwater systems			Deleted	
MSS025010	Assist with odour source assessment			Deleted	
MSS025011	Assist with odour field assessment			Deleted	
MSS025016	Perform sampling and			Deleted	

MSS Sustainability Training Package Release 4.0		MSS Sustainability Training Package Release 4.1			
Code	Title	Code	Title	Comments	E/ N
	testing of stationary emissions				
MSS027016	Contribute to improving environmental performance			Deleted	
MSS027019	Implement and maintain the site health and safety management system			Deleted	
MSS027020	Coordinate water quality management activities			Deleted	
MSS027021	Coordinate air quality management activities			Deleted	
MSS027022	Coordinate noise management activities			Deleted	
MSS027023	Coordinate site remediation or rehabilitation activities			Deleted	
MSS027024	Select, commission and maintain environmental monitoring instruments			Deleted	

No further units of competency were added, deleted or changed in the update from Release 4.0 to Release 4.1.

### Mapping of units of competency: MSS Release 3.0 to MSS Release 4.0

MSS Sustainability Training Package Release 3.0		MSS Sustainability Training Package Release 4.0			
Code	Title	Code	Title	Comments	E/ N
		MSS405087	Investigate energy management as a business issue	New	
MSS405086	Develop sustainable energy practices	MSS405088	Plan, implement and monitor energy management	Code and title changed. Application broadened. Element and performance criteria structure and content changed with removal of requirement to develop energy trading plans (moved to knowledge evidence) and addition of reporting. Additional information about scope added to performance evidence and additional information about scope and depth added to knowledge evidence.	N
		MSS405089	Develop a business case for improved energy management	New	

No further units of competency were added, deleted or changed in the update from Release 3.0 to Release 4.0.

### Mapping of units of competency: MSS Release 2.0 to MSS Release 3.0

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
MSS015024	Develop required sustainability reports	MSS015024	Develop required sustainability reports	updated	E
MSS015006	Report to Global Reporting	MSS015035	Report to Global Reporting	No change to vocational outcomes. Code updated. Name changed. Application and	N

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
	Initiative guidelines		Initiative Standards	licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. GRI Guidelines superseded. Updated to reflect new GRI Standards. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
MSS015014	Develop response to sustainability related regulation	MSS015036	Develop response to sustainability related regulation	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS015017	Develop regulated sustainability reports	MSS015037	Develop regulated sustainability reports	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS015019	Establish/review metrics for social sustainability	MSS015038	Establish and review metrics for social sustainability	No change to vocational outcomes. Code updated. Name changed. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
				elements and performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
		MSS015039	Develop response to corporate social responsibility	New unit	
MSS027006	Coordinate water quality management activities	MSS027020	Coordinate water quality management activities	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to elements and performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed	E
MSS027007	Coordinate air quality management activities	MSS027021	Coordinate air quality management activities	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Pre-requisites removed. Changes to elements and performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
MSS027008	Coordinate noise management activities	MSS027022	Coordinate noise management activities	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to elements and performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS027009	Coordinate site remediation or rehabilitation activities	MSS027023	Coordinate site remediation or rehabilitation activities	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Pre-requisites removed. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS027011	Select, commission and maintain environmental monitoring instruments	MSS027024	Select, commission and maintain environmental monitoring instruments	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS403007	Map an office value stream	MSS403052	Map an office value stream	No change to vocational outcomes. Code updated.	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
				Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
MSS403013	Lead team culture improvement	MSS405013	Facilitate holistic culture improvement in an organisation	Removed Superseded by MSS405013 Facilitate a holistic culture improvement in an organisation	E
MSS403033	Map an operational process	MSS403053	Map an operational process	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS403041	Facilitate breakthrough improvements	MSS403054	Facilitate breakthrough improvements	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
MSS403044	Facilitate continuous improvement through the use of standardised procedures and practices	MSS403055	Facilitate continuous improvement through the use of standardised procedures and practices	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS404052	Apply statistics to operational processes	MSS404054	Apply statistics to operational processes	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS404081	Undertake proactive maintenance analyses	MSS404085	Undertake proactive maintenance analyses	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS404082	Assist in implementing a proactive	MSS404086	Assist in implementing a proactive	No change to vocational outcomes. Code updated. Application and licensing	E



MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
	maintenance strategy		maintenance strategy	statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
MSS404083	Support proactive maintenance	MSS404087	Support proactive maintenance	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS405002	Analyse and map a value stream	MSS405008	Analyse and map a value stream	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS405003	Manage a value stream	MSS405009	Manage a value stream	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
				Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
MSS405010	Manage relationships with non-customer external organisations	MSS405015	Manage relationships with non-customer external organisations	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS405012	Manage workplace learning	MSS405016	Manage workplace learning	No change to vocational outcomes. Unit template updated to meet policy requirements. Assessment conditions simplified, and superfluous information removed.	E
MSS405013	Facilitate holistic culture improvement in an organisation	MSS405013	Facilitate holistic culture improvement in an organisation	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS405050	Determine and improve process capability	MSS405054	Determine and improve process capability	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
				requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
MSS405060	Develop the application of enterprise control systems in an organisation	MSS405063	Develop the application of enterprise control systems in an organisation	No change to vocational outcomes. Code updated. Name changed. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS405061	Determine and establish information collection requirements and processes	MSS405064	Determine and establish information collection requirements and processes	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS407002	Review operations practice tools and techniques	MSS407018	Review use of competitive systems and practices tools	No change to vocational outcomes. Unit template updated to meet policy requirements. Assessment conditions simplified, and superfluous information removed.	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
MSS407004	Facilitate improvements in the internal value stream	MSS407019	Facilitate improvements in the internal value stream	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS407005	Undertake a qualitative review of a process change	MSS407020	Undertake a qualitative review of a process change	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Foundation skills information added. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS407007	Respond to a major non-conformance	MSS407021	Respond to a major non-conformance	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS407009	Facilitate improvements	MSS407022	Facilitate improvements in	No change to vocational outcomes. Code updated. Application and licensing	E

MSS Sustainability Training Package Release 2.0		MSS Sustainability Training Package Release 3.0			
Code	Title	Code	Title	Comments	E/ N
	in the external value stream		the external value stream	statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	
MSS408003	Develop models of future state operations practice	MSS408009	Develop models of future state operations practice	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E
MSS408008	Analyse data for relevance to organisational learning	MSS408010	Analyse data for relevance to organisational learning	No change to vocational outcomes. Code updated. Application and licensing statement simplified. Unit template updated to meet policy requirements. Changes to performance criteria. Range of conditions moved to Companion Volume. Assessment requirements amended. Assessment conditions simplified, and superfluous information removed.	E

## Appendix 3: MSS Skill Sets mapping of skill sets

### Mapping of skill sets: MSS Release 4.2 to Release 5.0

Key: E = Equivalent, N = Non-equivalent

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Notes	Equiv. status
Code	Title	Code	Title		
N/A	N/A	MSSSS00007	Lead energy and greenhouse gas improvements	Deleted	NA
MSSSS00009	Determine energy usage	MSSSS00030	Determine energy usage	Updated for unit code/title changes	N
MSSSS00011	Improve energy usage for a work area	MSSSS00031	Improve energy usage for a work area	Updated for unit code/title changes	N
N/A	N/A	MSSSS00012	Recommend energy improvements	Deleted	NA
N/A	N/A	MSSSS00013	Reduce sustainability risk	Deleted	NA
N/A	N/A	MSSSS00016	Implement and maintain energy management	No Change	NA
MSSSS00017	Improve energy usage for a process or organisation	MSSSS00032	Improve energy usage for a process or organisation	Updated for unit code/title changes	N
N/A	N/A	MSSSS00018	Continuous Improvement Fundamentals	New skill set	NA
N/A	N/A	MSSSS00019	CSP Fundamentals	New skill set	NA
N/A	N/A	MSSSS00020	Apply 5S	New skill set	NA
N/A	N/A	MSSSS00021	Operational Data Analytics	New skill set	NA
N/A	N/A	MSSSS00022	Visual Management	New skill set	NA

MSS Training Package Release 4.2		MSS Training Package Release 5.0		Notes	Equiv. status
Code	Title	Code	Title		
N/A	N/A	MSSSS00023	Work Standardisation	New skill set	NA
N/A	N/A	MSSSS00024	Problem Solving	New skill set	NA
N/A	N/A	MSSSS00025	Facilitate Team Improvement Activities	New skill set	NA
N/A	N/A	MSSSS00026	Senior Leadership	New skill set	NA
NA	NA	MSSSS00027	Testing for site contamination	New skill set	NA
NA	NA	MSSSS00028	Lead sustainability improvements	New skill set	NA
NA	NA	MSSSS00029	Contribute to sustainable operations	New skill set	NA

### *Mapping of skill sets: MSS Release 4.1 to MSS Release 4.2*

No skill sets were updated as part of MSS Release 4.2.

### *Mapping of skill sets: MSS Release 4.0 to MSS Release 4.1*

MSS Sustainability Training Package Release 4.0		MSS Sustainability Training Package Release 4.1		Comments	E/ N
Code	Title	Code	Title		
MSSSS0008	Audit energy usage for a work area			Deleted	
MSSSS00014	Direct Corporate Social Responsibility			Deleted	
MSSSS00015	Lead Response to Corporate Social Responsibility			Deleted	

### Mapping of skill sets: MSS Release 3.0 to MSS Release 4.0

MSS Sustainability Training Package Release 3.0		MSS Sustainability Training Package Release 4.0			
Code	Title	Code	Title	Comments	E/ N
MSSSS000010	Improve energy usage for a process or organisation	MSSSS000017	Improve energy usage for a process or organisation	Revised unit MSS405088 Plan, implement and monitor energy management added to replace MSS405086 Develop sustainable energy practices	NA



## Appendix 4: AQF certificate level descriptors, occupational outcomes and qualifications

RTOs must meet the requirements of the AQF and ensure that students are enrolled in appropriate qualifications. This section provides information for each qualification about the occupational outcomes and the AQF qualification type learning outcomes descriptor.

The learning outcomes descriptor for each AQF qualification type includes the volume of learning. The difference between the volume of learning and amount of training is given below. RTOs are required to comply with the AQF in applying the volume of learning to training programs and must therefore develop and implement strategies for training and assessment that are consistent with the AQF.

The AQF provides the **volume of learning** allocated to a qualification. This includes all teaching, learning and assessment activities that are required to be undertaken by the typical student to achieve the learning outcomes. These activities may include guided learning (classes, lectures, tutorials, online or self-paced study), individual study, research, learning activities in the workplace and assessment activities.

The **amount of training** provided by an RTO is part of the overall volume of learning and relates primarily to formal training/learning activities (including classes and other activities, as well as workplace learning), but does not include assessment activities.

When developing training and assessment strategies RTOs must take into account the need to allow sufficient time and provide suitable activities, prior to assessment, for students to reflect on and absorb the knowledge, to practise the skills in different contexts, and to learn to apply the skills and knowledge in the varied environments of workplaces.

The following sections give the relevant AQF descriptor, including the volume of learning that is required, and the description of each qualification.

### *Certificate III*

#### Certificate III AQF descriptor

##### **Purpose**

The Certificate III qualifies individuals who apply a broad range of knowledge and skills in varied contexts to undertake skilled work and as a pathway for further learning.

##### **Knowledge**

Graduates of a Certificate III will have factual, technical, procedural and theoretical knowledge in an area of work and learning.

##### **Skills**

Graduates of a Certificate III will have:

- cognitive, technical and communication skills to interpret and act on available information
- cognitive and communication skills to apply and communicate known solutions to a variety of predictable problems and to deal with unforeseen contingencies using known solutions

- technical and communication skills to provide technical information to a variety of specialist and non-specialist audiences
- technical skills to undertake routine and some non-routine tasks in a range of skilled operations.

### **Application**

Graduates of a Certificate III will demonstrate the application of knowledge and skills with discretion and judgement in the selection of equipment, services or contingency measures, and skills to adapt and transfer skills and knowledge within known routines, methods, procedures and time constraints.

Work is in the context of taking responsibility for own outputs in work and learning, including participation in teams and taking limited responsibility for the output of others within established parameters.

### **Volume of learning**

The volume of learning of a Certificate III is typically 1-2 years which equates to 1200- 2400 hours.

## **MSS30322 Certificate III in Competitive Systems and Practices**

The MSS30322 Certificate III in Competitive Systems and Practices specifies the competencies required to apply competitive systems and practices to one's own work as well as, where required, to assist others to apply competitive systems and practices to their work.

This qualification provides a mixture of introductory and more advanced skills in competitive systems and practices. The qualification packaging has been developed on an assumption that competency will be developed through a combination of on and off-the-job learning strategies.

This qualification provides the skills needed to improve efficiency in a person's own work role and contribute to the efficiency of a team or work area. It complements but does not duplicate qualifications supplying operational, production, maintenance, logistics, administration or other technical skills to industry. Where the candidate does not hold these skills the appropriate qualification from another Training Package should be considered.

The concepts and practices within this qualification may be known under a variety of titles, many of which relate to manufacturing which is the origin of many competitive systems and practices. Some titles refer to manufacturing, which is the origin of many competitive systems and practices. Other titles refer to specific techniques and still others to approaches which apply a range of their own techniques and techniques adapted from other approaches. The most common term is lean manufacturing. However, other names for some of the systems and techniques include agile manufacturing, agile project management, lean operations, six sigma, lean six sigma, continuous improvement and so on.

Job roles related to this qualification may be in small or large organisations and include individuals who must support, facilitate or lead the work of others, for example, team leaders and process or operational specialists.

The qualifications apply to job roles in production, office, transport and logistics, members of project teams implementing competitive systems and practices and other job roles which require similar skills. The qualification can also apply to tradespeople in maintenance or production roles.

This qualification provides competitive systems and practices skills that can be applied in the following organisations and environments:

- manufacturing enterprises
- mining and service organisations
- office environments
- organisations in a value chain, such as:
  - suppliers
  - customers
  - distributors, warehouses, transport suppliers and other logistics support organisations
  - professional service suppliers, for example, legal, engineering, accounting, auditing, and education and training suppliers that may be assisting other organisations in implementing competitive systems and practices
- other organisations implementing competitive systems and practices, for example, Government Departments, healthcare providers, transport organisations, and so on.

## *Certificate IV*

### *Certificate IV AQF descriptor*

#### **Purpose**

The Certificate IV qualifies individuals who apply a broad range of specialised knowledge and skills in varied contexts to undertake skilled work and as a pathway for further learning.

#### **Knowledge**

Graduates of a Certificate IV will have broad factual, technical and theoretical knowledge in a specialised field of work and learning.

#### **Skills**

Graduates of a Certificate IV will have:

- cognitive skills to identify, analyse, compare and act on information from a range of sources
- cognitive, technical and communication skills to apply and communicate technical solutions of a non-routine or contingency nature to a defined range of predictable and unpredictable problems
- specialist technical skills to complete routine and non-routine tasks and functions
- communication skills to guide activities and provide technical advice in the area of work and learning.

## Application

Graduates of a Certificate IV will demonstrate the application of knowledge and skills to specialised tasks or functions in known or changing contexts with responsibility for own functions and outputs, and may have limited responsibility for organisation and quantity and quality of the output of others within limited parameters.

## Volume of learning

The volume of learning of a Certificate IV is typically 0.5-2 years. This equates to 600-2400 hours.

## MSS40122 Certificate IV in Sustainable Operations

The MSS40122 Certificate IV in Sustainable Operations provides the skills and knowledge required to lead the implementation of sustainability related initiatives in a section of an organisation. The qualification has been developed with manufacturing operations as a focus. However, because of the range of organisations in a typical manufacturing value chain it may also be applied to other types of organisations. The qualification is also appropriate for a technician or similar person who as part of a broader job role needs to undertake sustainability related work.

The qualification packaging has been developed on an assumption that competency will be developed through a combination of on and off-the-job learning strategies.

The MSS40122 Certificate IV in Sustainable Operations specifies the competencies required to identify, implement and report on sustainability related initiatives within a section of an enterprise, such as a defined work area, work team or stage of production. It may also apply to a small or medium enterprise. It includes assisting organisations to meet their obligations under sustainability related regulatory arrangements, government or similar incentives or other initiatives that apply to the employee's area of operation.

The qualification also applies where an overview of sustainability related issues is required without the detailed technical underpinning skills, such mapping of resource usage (e.g. water and carbon) along a value chain, or mass balancing across a site or large enterprise. Where these technical skills are required the MSS50122 Diploma of Sustainable Operations should be considered.

Employment outcomes related to this qualification may include specialist roles, such as a sustainability officer or sustainability project assistant. The qualification also provides specialist sustainability competencies to technical, supervisory or operational employees who do not have whole of enterprise responsibilities.

This qualification provides sustainability skills that can be applied in the following organisations and environments:

- manufacturing enterprises
- organisations in a manufacturing value chain, such as:
  - suppliers
  - customers
  - distributors, warehouses, transport suppliers and other logistics support organisations

- professional service suppliers to manufacturing, for example, legal, engineering, accounting, auditing and education and training suppliers
- other organisations who are improving their sustainability performance.

### MSS40222 Certificate IV in Environmental Monitoring and Technology

The MSS40222 Certificate IV in Environmental Monitoring and Technology covers the skills and knowledge required to conduct environmental sampling, testing and monitoring in a variety of industry sectors, such as:

- environmental monitoring, sampling and field testing (e.g. air, water, soil and rocks)
- geotechnical services
- natural resource management
- water supply and treatment, storm and wastewater management
- solid and hazardous waste management.

Job roles targeted by this qualification include environmental assistants, environmental technicians and similar personnel employed by enterprises and Commonwealth, state/territory/local governments in the sectors listed above. Many of these employees are engaged in the monitoring of environmental impacts at industrial sites. They operate monitoring equipment, collect samples and conduct tests both in the field and at site laboratories. Other employees may collect a range of field data relating to the suitability of land and water use and process and present this data using geographical information systems (GIS) software.

In broad terms, they may:

- plan and conduct site sampling, field testing and measurements (e.g. meteorological)
- plan field work, arrange access to sites, logistics, equipment and supplies
- assemble, test, pack and transport equipment and supplies
- navigate using maps and global positioning systems (GPS)
- collect, process and present spatial/attribute data using GPS and GIS
- conduct field surveys of flora, fauna, water and soils
- calibrate and operate a wide variety of field-based instrumentation
- troubleshoot, repair, maintain and adapt instrumentation
- log and process data using a variety of computer hardware and software
- interpret data to identify significant anomalies and trends
- report results and make logical conclusions
- define and solve problems of limited complexity where the information available is less obvious, but not contradictory, and can be determined by direct reasoning
- work under the direction and regular supervision of environmental officers, environmental site coordinators, site managers, or environmental scientists, engineers and planners

- work in a team and may have responsibility for their own work outputs.

This qualification is typically used to prepare new employees or develop the skills of existing workers performing an environmental assistant role in a variety of industry sectors.

This qualification recognises that the industry sectors listed above employ environmental assistants and technicians who have broad technical knowledge and skills in the area of environmental sampling and testing and some understanding of the industry processes and/or ecosystems that they are working with. These personnel do not have the more substantial knowledge of environmental monitoring; complex instrumentation; data analysis; environmental impacts and the strategies for minimising these impacts; and remediation/rehabilitation of sites, that is provided by the MSS50222 Diploma of Environmental Monitoring and Technology.

### **MSS40322 Certificate IV in Competitive Systems and Practices**

The MSS40322 Certificate IV in Competitive Systems and Practices specifies the competencies required by team leaders or others who are responsible for facilitating and monitoring the implementation of competitive systems and practices to improve efficiency in a team or work area and own work role. Individuals apply broad knowledge and analytical skills to facilitate change and improve efficiency.

This qualification provides a mixture of intermediate skills in competitive systems and practices and interpersonal and team leadership skills. The qualification packaging has been developed on an assumption that competency will be developed through a combination of on and off-the-job learning strategies.

This qualification provides the skills needed to improve efficiency in a team or work area through the implementation of competitive systems and practices and the facilitation of the contribution of others. The qualification also applies to individuals who act as technical resource personnel for others in the implementation of competitive systems and practices.

The emphasis in the qualification is on leading and implementing competitive systems and practices as well as applying the competencies to one's own work. It complements but does not duplicate qualifications supplying operational, production, maintenance, logistics or other technical skills to industry. Where the candidate does not hold these skills the appropriate qualification from another Training Package should be considered.

The concepts and practices within this qualification may be known under a variety of titles, many of which relate to manufacturing which is the origin of many competitive systems and practices. Some titles refer to manufacturing, which is the origin of many competitive systems and practices. Other titles refer to specific techniques and still others to approaches which apply a range of their own techniques and techniques adapted from other approaches. The most common term is lean manufacturing. However, other names for some of the systems and techniques include agile manufacturing, agile project management, lean operations, six sigma, lean six sigma, continuous improvement and so on.

Job roles related to this qualification may be in small or large organisations and include individuals who provide a specialist support role in competitive systems and practices for an organisation. The target job roles may be in production or operations, office, maintenance, transport and logistics, competitive systems and practices project teams and other job roles requiring similar skills.

This qualification provides competitive systems and practices skills that can be applied in the following organisations and environments:

- manufacturing enterprises
- mining and service organisations
- office environments
- organisations in a value chain, such as:
  - suppliers
  - customers
  - distributors, warehouses, transport suppliers and other logistics support organisations
- professional service suppliers, for example, legal, engineering, accounting, auditing, and education and training suppliers that may be assisting other organisations in implementing competitive systems and practices
- other organisations implementing competitive systems and practices, for example, Government Departments, healthcare providers, transport organisations, and so on.

## *Diploma*

### Diploma AQF descriptor

#### **Purpose**

The Diploma qualifies 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.

#### **Knowledge**

Graduates of a Diploma will have technical and theoretical knowledge and concepts, with depth in some areas within a field of work and learning.

#### **Skills**

Graduates of a Diploma will have:

- cognitive and communication skills to identify, analyse, synthesise and act on information from a range of sources
- cognitive, technical and communication skills to analyse, plan, design and evaluate approaches to unpredictable problems and/or management requirements
- specialist technical and creative skills to express ideas and perspectives
- communication skills to transfer knowledge and specialised skills to others and demonstrate understanding of knowledge.

## Application

Graduates of a Diploma will demonstrate the application of knowledge with depth in some areas of specialisation, in known or changing contexts and skills to transfer and apply theoretical concepts and/or technical and/or creative skills in a range of situations with personal responsibility and autonomy in performing complex technical operations and for quantity and quality. Work involves initiative and judgement to organise the work of self and others and plan, coordinate and evaluate the work of teams within broad but generally well-defined parameters.

## Volume of learning

The volume of learning for a Diploma is typically 1-2 years which equates to 1200-2400 hours.

## MSS50122 Diploma of Sustainable Operations

The MSS50122 Diploma of Sustainable Operations provides the skills and knowledge required to work in a technical, supervisory or operational role in sustainability in an organisation and/or its value chain (e.g. suppliers of goods or services, or customers). The qualification has been developed with manufacturing operations as a focus. However, because of the range of organisations in a typical manufacturing value chain it may also be applied to other types of organisations.

The qualification packaging has been developed on an assumption that competency will be developed through a combination of on and off-the-job learning strategies.

The MSS50122 Diploma of Sustainability specifies the competencies required for employment in job roles related to assisting organisations to improve sustainability and to meet their obligations under sustainability related regulatory arrangements, government or similar incentives, or other initiatives that apply to their operations.

Employment outcomes related to this qualification may include specialist roles, such as a sustainability manager, or the qualification can provide specialist sustainability competencies to technical, supervisory or operational employees.

This qualification provides sustainability skills that can be applied inside an organisation and its value chain. Examples include:

- manufacturing enterprises
- organisations in a value chain, such as:
  - suppliers
  - customers
  - distributors, warehouses, transport suppliers and other logistics support organisations
  - professional service suppliers to manufacturing, for example, legal, engineering, accounting and auditing suppliers
  - sustainability consulting enterprises.

## MSS50222 Diploma of Environmental Monitoring and Technology

The MSS50222 Diploma of Environmental Monitoring and Technology covers the skills and knowledge required to apply a range of methods and technologies to conduct environmental



sampling, testing and monitoring in most industry sectors and to assist environmental scientists, engineers and planners with site assessment, minimising environmental impacts of processes and remediation/rehabilitation of sites.

The MSS50222 Diploma of Environmental Monitoring and Technology provides technical training across a range of industry sectors, such as:

- environmental monitoring, sampling and field testing (e.g. air, odour, water, soil and noise)
- geotechnical services
- natural resource management
- occupational hygiene monitoring (e.g. air, noise and radiation)
- water supply and treatment, storm and wastewater management
- solid and hazardous waste management
- site remediation and rehabilitation
- resource efficiency (e.g. energy, water and waste auditing).

Job roles targeted by this qualification include environmental officers, environmental protection officers, environmental compliance officers, environmental technicians and similar personnel employed by enterprises and Commonwealth, state/territory/local governments in the sectors listed above. These personnel often work with environmental scientists, engineers, planners and community groups to manage and conserve natural systems and resources, minimise pollution, remediate/rehabilitate sites and trial practical strategies to protect and improve ecosystems. Their work often involves environmental monitoring and technology, internal auditing and continuous improvements to enhance compliance and minimise the environmental impacts of processes. Government employees may be more involved with external inspection and auditing of enterprises and negotiating appropriate responses to instances of non-compliance.

In broad terms, they may:

- plan and schedule work and project activities (e.g. inspections and field surveys) and determine equipment, materials and consumable requirements
- develop site or field plans/instructions for specific environmental management activities
- assist with the design of environmental monitoring programs for sites/areas
- contribute to the assessment of environmental impacts of development and human activities
- undertake part or total ecological studies for a site
- conduct site inspections and full or part environmental audits of processes
- conduct field surveys of flora, fauna, water and soils
- collect samples/specimens, such as air, odour, water, groundwater, waste, soil residues, noise, biological, microbiological and geological

- set up, test, conduct calibration checks and operate a wide range of environmental monitoring equipment, field test instruments, data loggers, and/or remote sensing stations
- troubleshoot, repair, maintain and/or adapt instrumentation
- conduct tests/measurements involving air, odour, water, groundwater, waste, soil residues, noise, microbiological, geological and meteorological samples
- collect, process and present spatial/attribute data using global positioning systems (GPS) and geographical information systems (GIS)
- analyse data to identify trends, unexpected results and report conclusions
- provide environmental management information to site personnel, enterprises, industry organisations and communities
- provide environmental management information to site personnel and community members
- conduct technical training and work skill instruction
- suggest strategies to minimise environmental impacts and for the remediation or rehabilitation of sites/areas
- explain inspection/audit findings, negotiate outcomes with enterprise representatives, and issue notices, as necessary
- prepare costings and proposals, manage the finances for small projects, and report and present project progress and outcomes.

## MSS50322 Diploma of Competitive Systems and Practices

The MSS50316 Diploma of Competitive Systems and Practices specifies the competencies required by managers, technical specialists or those in similar job roles that are responsible for the implementation of competitive systems and practices in an organisation.

This qualification provides the skills and knowledge required by a manager or technical specialist to determine and supervise the strategy for implementing competitive systems and practices in an organisation and the organisation's value chain.

The primary application of this qualification is where an individual has responsibility for determining, implementing and managing the implementation of competitive systems and practices across an organisation. Responsibilities may also include liaison with the organisation's value chain on implementing and measuring the performance of competitive systems and practices.

The qualification packaging has been developed on an assumption that competency will be developed through a combination of on and off-the-job learning strategies.

This qualification provides the skills needed to improve efficiency in an organisation through the implementation of competitive systems and practices. It complements but does not duplicate qualifications supplying operational, production, maintenance, logistics or other technical skills to industry. Where the candidate does not hold these skills the appropriate qualification from another Training Package should be considered.

The concepts and practices within this qualification may be known under a variety of titles. many of which relate to manufacturing which is the origin of many competitive systems and practices. Some

titles refer to manufacturing, which is the origin of many competitive systems and practices. Other titles refer to specific techniques and still others to approaches which apply a range of their own techniques and techniques adapted from other approaches. The most common term is lean manufacturing. However, other names for some of the systems and techniques include agile manufacturing, agile project management, lean operations, six sigma, lean six sigma, continuous improvement and so on.

The main target job roles related to this qualification are:

- people with operating responsibility for a whole area, site or organisation who are managing the implementation of competitive systems and practices
- technicians and other specialists providing technical expertise to support and supervise the implementation of competitive systems and practices across an organisation or site.

The target job roles may be in small or large organisations in production or operations, office maintenance, transport and logistics, and other job roles requiring the skills delivered by completing the qualification.

This qualification provides competitive systems and practices skills that can be applied in the following organisations and environments:

- manufacturing enterprises
- mining and service organisations
- office environments
- organisations in a manufacturing value chain, such as:
  - suppliers
  - customers
  - distributors, warehouses, transport suppliers and other logistics support organisations
- professional service suppliers, for example, legal, engineering, accounting, auditing, and education and training suppliers that may be assisting other organisations in implementing competitive systems and practices
- other organisations implementing competitive systems and practices, for example, Government Departments, healthcare providers, transport organisations, and so on.

## *Graduate Certificate*

### *Graduate Certificate AQF descriptor*

#### **Purpose**

The Graduate Certificate qualifies individuals who apply a body of knowledge in a range of contexts to undertake professional or highly skilled work and as a pathway for further learning.

## **Knowledge**

Graduates of a Graduate Certificate will have specialised knowledge within a systematic and coherent body of knowledge that may include the acquisition and application of knowledge and skills in a new or existing discipline or professional area.

## **Skills**

Graduates of a Graduate Certificate will have:

- cognitive skills to review, analyse, consolidate and synthesise knowledge and identify and provide solutions to complex problems
- cognitive skills to think critically and to generate and evaluate complex ideas
- specialised technical and creative skills in a field of highly skilled and/or professional practice
- communication skills to demonstrate an understanding of theoretical concepts
- communication skills to transfer complex knowledge and ideas to a variety of audiences.

## **Application**

Graduates of a Graduate Certificate will demonstrate the application of knowledge and skills:

- to make high level, independent judgements in a range of technical or management functions in varied specialised contexts
- to initiate, plan, implement and evaluate broad functions within varied specialised technical and/or creative contexts
- with responsibility and accountability for personal outputs and all aspects of the work or function of others within broad parameters.

## **Volume of learning**

The volume of learning of a Graduate Certificate is typically 0.5 – 1 year.

## **[MSS80322 Graduate Certificate in Competitive Systems and Practices](#)**

The MSS80322 Graduate Certificate in Competitive Systems and Practices provides professional development training and recognition for people exercising leadership and/or change management functions in an organisation using lean principles and other competitive systems and practices.

This qualification provides targeted, specialised skills and knowledge in competitive systems and practices with an emphasis on leadership, alignment of organisational strategy and values with competitive systems and practices, developing organisational culture and systems and value chain liaison.

The qualification provides professional development and therefore is not suitable for direct entry. It requires a basis of experience from which to build specialist skills in leadership and management of change for competitive systems and practices at the senior level of an organisation.

## *Graduate Diploma*

### Graduate Diploma AQF descriptor

#### **Purpose**

The Graduate Diploma qualifies individuals who apply a body of knowledge in a range of contexts to undertake professional or highly skilled work and as a pathway for further learning.

#### **Knowledge**

Graduates of a Graduate Diploma will have advanced knowledge within a systematic and coherent body of knowledge that may include the acquisition and application of knowledge and skills in a new or existing discipline or professional area.

#### **Skills**

Graduates of a Graduate Diploma will have:

- cognitive skills to review, analyse, consolidate and synthesise knowledge and identify and provide solutions to complex problems
- cognitive skills to think critically and to generate and evaluate complex ideas
- specialised technical and creative skills in a field of highly skilled and/or professional practice
- communication skills to demonstrate an understanding of theoretical concepts
- communication skills to transfer complex knowledge and ideas to a variety of audiences.

#### **Application**

Graduates of a Graduate Diploma will demonstrate the application of knowledge and skills:

- to make high level, independent judgements in a range of technical or management functions in varied specialised contexts
- to initiate, plan, implement and evaluate broad functions within varied specialised technical and/or creative contexts
- with responsibility and accountability for personal outputs and all aspects of the work or function of others within broad parameters.

#### **Volume of learning**

The volume of learning of a Graduate Diploma is typically 1-2 years which equates to 1200-2400 hours.

### **MSS80422 Graduate Diploma of Competitive Systems and Practices**

The MSS80322 Graduate Diploma of Competitive Systems and Practices provides comprehensive professional development training and recognition for people exercising major leadership and accountability for strategic and change management functions in an organisation using lean principles and other competitive systems and practices.

This qualification provides extensive specialised skills and knowledge in competitive systems and practices with an emphasis on leadership, alignment of organisational strategy and values with

competitive systems and practices, developing the organisational culture and systems and value chain liaison. This qualification can also integrate high level technical expertise.

The qualification provides professional development and therefore is not suitable for direct entry. It requires a basis of experience from which to build specialist skills in leadership and management of change for competitive systems and practices at the senior level of an organisation.

## Appendix 5: Employability Skills in MSS qualifications

There are eight Employability Skills:

- communication
- teamwork
- problem-solving
- initiative and enterprise
- planning and organising
- self-management
- learning
- technology.

Employability Skills Summary for each qualification is provided below. Summaries are designed to assist trainers and assessors to identify and include important industry application of Employability Skills in training and assessment strategies.

Employability Skills Summaries provide examples of how each skill is applicable to the occupational outcomes covered by the qualification.

Employability Skills Summaries contain general information about industry context which is further explained as measurable outcomes of performance in the units of competency in each qualification.

The detail in each Employability Skills Summary will vary depending on the range of occupational outcomes covered by the qualification in question.

Employability Skills Summaries are not exhaustive lists of qualification requirements or checklists of performance (which are separate assessment tools that should be designed by trainers and assessors after analysis at the unit level).

Employability Skills Summaries contain information that may also assist in building students' understanding of industry and workplace expectations.

Employability Skill	Industry requirements for MSS30322 Certificate III in Competitive Systems and Practices
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Implement WHS procedures and distribute related safety information</li> <li>• Complete, access and interpret standardised documentation on behalf of self and other team members</li> <li>• Share and discuss information with others about work activities</li> <li>• Access and apply workplace procedures</li> <li>• Provide information to team members about workplace procedures</li> <li>• Read and interpret instructions, specifications, standard operating procedures and other work-related documents</li> <li>• Seek assistance or information from relevant personnel or supervisors</li> <li>• Debrief on workplace changes with relevant stakeholders</li> <li>• Record work-related information</li> <li>• Access and use workplace communication tools and equipment</li> <li>• Apply numeracy skills to work procedures</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Identify roles of other work colleagues including formal team members where teamwork is used as the form of work organisation</li> <li>• Lead others in a production environment</li> </ul>

Employability Skill	Industry requirements for MSS30322 Certificate III in Competitive Systems and Practices
	<ul style="list-style-type: none"> <li>• Share work-related information with peers, including team members, supervisors and management</li> <li>• Identify hazards to self and other team members</li> <li>• Recognise the value chain and advise team members as to how they can contribute to the final quality of the product</li> <li>• Review changes to work practices and work relationships with supervisors</li> <li>• Provide assistance with work operations, as required</li> <li>• Seek assistance with work operations, as required</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Monitor workplace activities</li> <li>• Report inconsistencies, non-compliances, faults or hazards</li> <li>• Identify factors within team or work area that are a constraint to work efficiency or reaching of production outcomes</li> <li>• Distinguish between essential and non-essential practices</li> <li>• Implement methods of increasing features/benefits of products or processes</li> <li>• Monitor jobs within team and make improvements</li> <li>• Note steps which cause a problem</li> <li>• Improve WHS</li> <li>• Compare required performance with actual performance</li> <li>• Identify situations where compliance to specifications or safety standards is unlikely</li> <li>• Recommend and implement improvements</li> <li>• Distinguish between random and identifiable causes of work problems</li> <li>• Identify causes of identified faults and take appropriate action</li> <li>• Investigate causes of quality deviations</li> <li>• Undertake root cause analysis (RCA)</li> <li>• Identify deviations and patterns</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Provide feedback on procedures and systems</li> <li>• Analyse feedback on procedures and systems</li> <li>• Analyse problems, implications or suggestions for improvements</li> <li>• Adjust work activity according to changes in work requirements</li> <li>• Take correct action and follow procedures</li> <li>• Identify methods of increasing own and team contribution to the value chain</li> <li>• Recommend changes and improvements</li> <li>• Take action to make improvements</li> <li>• Implement changes</li> <li>• Monitor actions to ensure cost-efficiency</li> <li>• Implement 5S procedures</li> <li>• Implement work practices to reduce waste</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Plan own work and work of team to meet required standards</li> <li>• Ensure the work area complies with WHS procedures</li> <li>• Organise processes, tools, equipment and materials</li> <li>• Implement improvements in accordance with procedures</li> <li>• Monitor and adjust production/process</li> <li>• Distinguish between essential and non-essential practices</li> <li>• Set the workplace in order</li> <li>• Implement use of planning tools within work of team</li> <li>• Implement 5S procedures</li> <li>• Determine and prioritise required actions</li> <li>• Collect and organise information from work activity</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Conduct all work activities according to safety and workplace standards</li> </ul>



Employability Skill	Industry requirements for MSS30322 Certificate III in Competitive Systems and Practices
	<ul style="list-style-type: none"> <li>• Implement and maintain housekeeping standards</li> <li>• Achieve operational outcomes</li> <li>• Monitor own performance</li> <li>• Interpret data and information as required by own job</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Recommend methods of increasing own contribution to the value chain</li> <li>• Adjust work processes according to procedures</li> <li>• Identify and manage impacts in own work area</li> <li>• Monitor resource use and minimise waste in own work activity</li> <li>• Keep the workplace clean and tidy</li> <li>• Assess own work</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Attend skill development training</li> <li>• Adapt to changing work requirements</li> <li>• Ask questions to aid learning</li> <li>• Identify skill requirements of self and team members</li> <li>• Seek skills development and training to meet needs</li> <li>• Identify personal skill gaps and additional skills needs</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Monitor own work and identify areas for improvement</li> <li>• Seek feedback on work performance</li> <li>• Provide feedback on work performance</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Work with technology safely and according to workplace standards</li> <li>• Identify equipment and processes appropriate for job and skill level</li> <li>• Handle and use equipment correctly and safely and within skill level</li> <li>• Assess operational efficiency of technology within own skill level and that of team members</li> <li>• Recognise and report faulty operation of equipment</li> <li>• Collect and apply data and information from technology</li> <li>• Use information technology appropriate for job</li> <li>• Apply maintenance procedures appropriate to job and skill level and operations</li> </ul>

Employability Skill	Industry requirements for MSS40122 Certificate IV in Sustainable Operations
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Oversee implementation of sustainability improvement procedures in section or for stage of production and develop and distribute related information</li> <li>• Distribute and explain standardised documentation on behalf of an area or a work team</li> <li>• Share and discuss information with others about enterprise activities</li> <li>• Communicate workplace procedures</li> <li>• Provide information and clarifications to other employees on workplace procedures in relation to sustainability</li> <li>• Provide and interpret instructions, specifications, standard operating procedures and other work-related documents</li> <li>• Provide assistance or information to relevant personnel</li> <li>• Debrief on workplace changes with relevant stakeholders</li> <li>• Record production, emissions and other work-related information for a work area</li> <li>• Access and use workplace communication tools and equipment</li> <li>• Apply numeracy skills to work procedures</li> <li>• Provide information about team activities to managers, supervisors and customers</li> </ul>

Employability Skill	Industry requirements for MSS40122 Certificate IV in Sustainable Operations
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Identify roles of work teams where teamwork is used as the form of work organisation</li> <li>• Supervise and lead others in a production environment</li> <li>• Share work-related information with peers, including team members, supervisors and management</li> <li>• Identify hazards to other employees and visitors</li> <li>• Review changes to work practices and work relationships with team leaders and other employees</li> <li>• Provide assistance with planning work operations as required</li> <li>• Seek assistance with work operations from specialists and other employees as required</li> <li>• Participate in multidisciplinary teams as required</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Monitor team production and maintenance activities and analyse inconsistencies, non-compliances, faults or hazards</li> <li>• Identify factors within work area that are a constraint to work efficiency or reaching of production outcomes</li> <li>• Identify essential and non-essential practices</li> <li>• Implement methods of increasing features/benefits of products or processes</li> <li>• Monitor responsibilities of team and make improvements to work organisation</li> <li>• Identify process steps which cause a problem and suggest improvement processes</li> <li>• Monitor sustainability performance and identify improvement opportunities and processes</li> <li>• Compare shift or area required performance with actual performance</li> <li>• Identify situations where compliance to specifications or safety standards is unlikely</li> <li>• Identify, recommend and implement improvements</li> <li>• Identify causes of identified faults and take appropriate action</li> <li>• Investigate causes of deviations from targets and standards in relation to sustainability</li> <li>• Undertake root cause analysis</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Manage team or area procedures and systems for optimum outcomes</li> <li>• Provide feedback on procedures and systems</li> <li>• Analyse problems, implications or suggestions for improvements</li> <li>• Adjust work activities according to changes in operating procedures or requirements</li> <li>• Identify methods of increasing contribution of team to sustainability</li> <li>• Identify and implement changes and improvements</li> <li>• Monitor processes and equipment to ensure cost efficiency</li> <li>• Implement and monitor work practices to reduce waste</li> <li>• Participate in multidisciplinary teams to develop new products or processes</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Ensure work area complies with sustainability obligations and requirements</li> <li>• Implement improvements in accordance with procedures</li> <li>• Distinguish between essential and non-essential practices</li> <li>• Implement use of planning tools within work of team</li> <li>• Determine and prioritise required actions</li> <li>• Collect, organise and analyse information from work activities</li> <li>• Monitor work activities according to safety and workplace standards</li> <li>• Monitor production targets and outcomes</li> <li>• Interpret data and information as required by own job</li> <li>• Ask questions to ensure there is understanding of work requirements</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS40122 Certificate IV in Sustainable Operations</b>
	in teams and among other employees
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Recommend methods of increasing own contribution to the value chain</li> <li>• Adjust work processes according to procedures and customer requirements</li> <li>• Identify and manage impact of change in own work</li> <li>• Minimise waste in own work activity</li> <li>• Assess own work performance</li> <li>• Set personal objectives for work performance</li> <li>• Manage own time</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Identify skill requirements of self and team members</li> <li>• Arrange skill development training for self and others</li> <li>• Adapt to changing work requirements</li> <li>• Ask questions to aid learning of others</li> <li>• Identify personal skill gaps and additional skills needs</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Monitor own work and identify areas for improvement</li> <li>• Seek feedback on work performance</li> <li>• Provide feedback on work performance to team leaders and team members</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Monitor technology to ensure sustainability according to legislative requirements and workplace standards</li> <li>• Identify equipment and processes appropriate for team jobs and skill levels of team members</li> <li>• Provide appropriate equipment to ensure safety and efficiency according to skill levels of employees</li> <li>• Assess operational efficiency of technology within own skill level and that of team members</li> <li>• Analyse data and other information from equipment reports</li> <li>• Use information technology appropriate for job</li> <li>• Manage maintenance procedures appropriate to job and processes according to skill levels of team members</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS40222 Certificate IV in Environmental Monitoring and Technology</b>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Receive and pass on written and oral messages, provide relevant information in response to requests and demonstrate effective interpersonal skills, including negotiation and conflict resolution</li> <li>• Record and store data, perform basic calculations of scientific quantities and present information in tables and graphs</li> <li>• Report using verbal responses, data entry into enterprise information management system and brief written reports</li> <li>• Communicate with team members, supervisors and customers, other site personnel and members of the public</li> <li>• Interpret enterprise procedures and safety data sheets (SDS)</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Work effectively with other people who may have diverse work styles and cultures</li> <li>• Promote cooperation and good relations in the team</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Deal with inquiries and requests for information in accordance with enterprise customer service requirements</li> <li>• Rectify simple equipment faults and errors in data using enterprise procedures</li> <li>• Recognise and report non-conformances or problems to appropriate personnel</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS40222 Certificate IV in Environmental Monitoring and Technology</b>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Access and provide relevant information within scope of responsibility and in accordance with enterprise procedures, including confidentiality requirements</li> <li>• Recognise potential incidents and take appropriate corrective action</li> <li>• Identify and report opportunities for improvements in procedures, processes, quality and equipment</li> <li>• Identify hazards associated with sites, samples, preparation methods, reagents and equipment and implement enterprise control measures</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Plan and organise daily work activities to ensure the timely completion of tasks</li> <li>• Modify work plans to suit changing conditions and priorities</li> <li>• Assemble, check and organise specified equipment and materials</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Follow enterprise procedures that reflect equal opportunity, anti-discrimination and non-harassment legislative requirements</li> <li>• Maintain enterprise standards of personal hygiene</li> <li>• Conduct work based on ethical values and principles and ensure quality and integrity of own work</li> <li>• Review own strengths, weaknesses and work practices for opportunities to continuously improve performance</li> <li>• Maintain security and confidentiality of all client/enterprise data and information</li> <li>• Use appropriate personal protective equipment to ensure personal safety when collecting, processing, testing, transferring or disposing of samples or conducting survey work</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Clarify instructions with supervisors to ensure a complete understanding of the task</li> <li>• Update knowledge and skills and take advantage of skill development opportunities</li> <li>• Coach others in participating in occupational health and safety (OHS) and environmental management issues</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Use communication, emergency, data recording, sampling and testing equipment, monitoring instruments and calibration standards</li> <li>• Use computers, software and enterprise information management systems to collect, process and report information</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS40322 Certificate IV in Competitive Systems and Practices</b>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Implement WHS procedures and distribute related safety information</li> <li>• Complete, access and interpret standardised documentation on behalf of self and other team members</li> <li>• Share and discuss information with others about work activities</li> <li>• Access and apply workplace procedures</li> <li>• Provide information to team members about workplace procedures</li> <li>• Read and interpret instructions, specifications, standard operating procedures and other work-related documents</li> <li>• Seek assistance or information from relevant personnel or supervisors</li> <li>• Debrief on workplace changes with relevant stakeholders</li> <li>• Record work-related information</li> <li>• Access and use workplace communication tools and equipment</li> <li>• Apply numeracy skills to work procedures</li> <li>• Provide information about team activities to supervisors, managers and customers</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Identify roles of other work colleagues, including formal team members, where teamwork is used as the form of work organisation</li> </ul>

Employability Skill	Industry requirements for MSS40322 Certificate IV in Competitive Systems and Practices
	<ul style="list-style-type: none"> <li>• Lead others in an operational environment</li> <li>• Share production or work-related information with peers, including team members, supervisors and management</li> <li>• Identify hazards to self and other team members</li> <li>• Recognise the value chain and advise team members as to how they can contribute to the final quality of the product</li> <li>• Review changes to work practices and work relationships with supervisors</li> <li>• Provide assistance with work operations, as required</li> <li>• Seek assistance with work operations, as required</li> <li>• Participate in multidisciplinary teams, as required</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Monitor workplace activities</li> <li>• Report inconsistencies, non-compliances, faults or hazards</li> <li>• Identify factors within team or work area that are a constraint to work efficiency or reaching of production outcomes</li> <li>• Distinguish between essential and non-essential practices</li> <li>• Implement methods of increasing features/benefits of products or processes</li> <li>• Monitor jobs within team and make improvements to work organisation</li> <li>• Note steps which cause a problem and implement improvement process</li> <li>• Improve WHS</li> <li>• Compare required performance with actual performance</li> <li>• Identify situations where compliance to specifications or safety standards is unlikely</li> <li>• Recommend and implement improvements</li> <li>• Distinguish between random and identifiable causes of work problems</li> <li>• Identify causes of identified faults and take appropriate action</li> <li>• Investigate causes of quality deviations</li> <li>• Undertake root cause analysis (RCA)</li> <li>• Identify deviations and fault patterns</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Provide feedback on procedures and systems</li> <li>• Analyse feedback on procedures and systems</li> <li>• Analyse problems, implications or suggestions for improvements</li> <li>• Adjust work activity according to changes in work requirements</li> <li>• Take correct action and follow procedures</li> <li>• Identify methods of increasing own and team contribution to the value chain</li> <li>• Recommend changes and improvements</li> <li>• Take action to make improvements</li> <li>• Implement changes</li> <li>• Monitor actions to ensure cost-efficiency</li> <li>• Implement 5S procedures</li> <li>• Implement work practices to reduce waste</li> <li>• Participate in multidisciplinary teams to develop new products or processes</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Plan own work and work of team to meet required standards</li> <li>• Ensure the work area complies with WHS procedures</li> <li>• Organise processes, operations, tools and materials</li> <li>• Implement improvements in accordance with procedures</li> <li>• Monitor and adjust production/process</li> <li>• Distinguish between essential and non-essential practices</li> <li>• Set the workplace in order</li> <li>• Implement use of planning tools within work of team</li> </ul>

Employability Skill	Industry requirements for MSS40322 Certificate IV in Competitive Systems and Practices
	<ul style="list-style-type: none"> <li>• Implement 5S procedures</li> <li>• Determine and prioritise required actions</li> <li>• Collect, organise and analyse information from work activity</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Conduct all work activities according to safety and workplace standards</li> <li>• Implement and maintain housekeeping standards</li> <li>• Achieve operational outcomes</li> <li>• Monitor own performance</li> <li>• Interpret data and information as required by own job</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Recommend methods of increasing own contribution to the value chain</li> <li>• Adjust work processes according to procedures</li> <li>• Identify and manage impacts in own work area</li> <li>• Monitor resource use and minimise waste in own work activity</li> <li>• Keep the workplace clean and tidy</li> <li>• Assess own work</li> <li>• Set personal objectives for work performance</li> <li>• Manage own time</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Attend skill development training</li> <li>• Adapt to changing work requirements</li> <li>• Ask questions to aid learning</li> <li>• Identify skill requirements of self and team members</li> <li>• Seek skills development and training to meet needs</li> <li>• Identify personal skill gaps and additional skills needs</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Monitor own work and identify areas for improvement</li> <li>• Seek feedback on work performance</li> <li>• Provide feedback on work performance</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Work with technology safely and according to workplace standards</li> <li>• Identify equipment and processes appropriate for job and skill level</li> <li>• Handle and use equipment correctly and safely and within skill level</li> <li>• Assess operational efficiency of technology within own skill level and that of team members</li> <li>• Recognise and report faulty operation of equipment</li> <li>• Collect and apply data and information from technology</li> <li>• Use information technology appropriate for job</li> <li>• Implement maintenance procedures appropriate to job and skill level of team and operations</li> </ul>

Employability Skill	Industry requirements for MSS50122 Diploma of Sustainable Operations
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Manage implementation sustainability improvement procedures and develop and distribute related information</li> <li>• Develop standardised documentation on behalf of an area or group of work teams</li> <li>• Share and discuss information with others about enterprise activities</li> <li>• Develop and communicate workplace procedures</li> <li>• Provide information and clarifications to team leaders and other employees on workplace procedures in relation to sustainability</li> <li>• Provide and interpret instructions, specifications, standard operating procedures and other work-related documents</li> <li>• Provide assistance or information to relevant personnel</li> <li>• Debrief on workplace changes with relevant stakeholders</li> <li>• Record production, emissions and other work-related information</li> </ul>

Employability Skill	Industry requirements for MSS50122 Diploma of Sustainable Operations
	<ul style="list-style-type: none"> <li>• Access and use workplace communication tools and equipment</li> <li>• Apply numeracy skills to work procedures</li> <li>• Provide information about team activities to managers, supervisors and customers</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Identify roles of work teams where teamwork is used as the form of work organisation</li> <li>• Supervise and lead others in a production environment</li> <li>• Share work-related information with peers, including team members, supervisors and management</li> <li>• Identify hazards to employees and visitors</li> <li>• Identify the value chain and advise other employees as to how they can contribute to the final quality of the product</li> <li>• Review changes to work practices and work relationships with team leaders and other employees</li> <li>• Provide assistance with planning work operations as required</li> <li>• Seek assistance with work operations from specialists and other employees as required</li> <li>• Participate in multidisciplinary teams as required</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Monitor production and maintenance activities</li> <li>• Analyse inconsistencies, non-compliances, faults or hazards</li> <li>• Identify factors within work area that are a constraint to work efficiency or reaching of production outcomes</li> <li>• Identify essential and non-essential practices</li> <li>• Implement methods of increasing features/benefits of products or processes</li> <li>• Monitor responsibilities of teams and make improvements to work organisation</li> <li>• Identify process steps which cause a problem and implement improvement processes</li> <li>• Monitor sustainability performance and implement improvement processes</li> <li>• Compare shift or area required performance with actual performance</li> <li>• Identify situations where compliance to specifications or safety standards is unlikely</li> <li>• Identify, recommend and implement improvements</li> <li>• Identify causes of identified faults and take appropriate action</li> <li>• Investigate causes of deviations from targets and standards in relation to sustainability</li> <li>• Undertake root cause analysis (RCA)</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Manage procedures and systems for optimum outcomes</li> <li>• Analyse feedback on procedures and systems</li> <li>• Analyse problems, implications or suggestions for improvements</li> <li>• Adjust work activities according to changes in customer requirements</li> <li>• Identify methods of increasing contribution of work teams to sustainability</li> <li>• Identify and implement changes and improvements</li> <li>• Monitor processes and equipment to ensure cost efficiency</li> <li>• Implement and monitor work practices to reduce waste</li> <li>• Participate in multidisciplinary teams to develop new products or processes</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Ensure work areas comply with sustainability obligations and requirements</li> <li>• Identify and manage processes, tools and materials</li> <li>• Implement improvements in accordance with procedures</li> <li>• Distinguish between essential and non-essential practices</li> </ul>

Employability Skill	Industry requirements for MSS50122 Diploma of Sustainable Operations
	<ul style="list-style-type: none"> <li>• Implement use of planning tools within work of teams</li> <li>• Determine and prioritise required actions</li> <li>• Collect, organise and analyse information from work activities</li> <li>• Monitor work activities according to safety and workplace standards</li> <li>• Set production targets and outcomes</li> <li>• Interpret data and information as required by own job</li> <li>• Ask questions to ensure there is understanding of work requirements in teams and among other employees</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Recommend methods of increasing own contribution to the value chain</li> <li>• Adjust work processes according to procedures and customer requirements</li> <li>• Identify and manage impact of change in own work</li> <li>• Minimise waste in own work activity</li> <li>• Assess own work performance</li> <li>• Set personal objectives for work performance</li> <li>• Manage own time</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Identify skill requirements of self and team members</li> <li>• Arrange skill development training for self and others</li> <li>• Adapt to changing work requirements</li> <li>• Ask questions to aid learning of others</li> <li>• Identify personal skill gaps and additional skill needs</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Monitor own work and identify areas for improvement</li> <li>• Seek feedback on work performance</li> <li>• Provide feedback on work performance to team leaders and team members</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Monitor technology to ensure sustainability according to legislative requirements and workplace standards</li> <li>• Identify equipment and processes appropriate for jobs and skill levels of employees</li> <li>• Provide appropriate equipment to ensure safety and efficiency according to skill levels of employees</li> <li>• Assess operational efficiency of technology within own skill level and that of team members</li> <li>• Analyse data and other information from equipment reports</li> <li>• Use information technology appropriate for job</li> <li>• Manage maintenance procedures appropriate to job and processes according to skill levels of team members</li> </ul>

Employability Skill	Industry requirements for MSS50222 Diploma of Environmental Monitoring and Technology
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Communicate appropriately with site personnel and community members in order to respond effectively to requests for environmental information</li> <li>• Write procedures using an unambiguous, logical sequence of instructions that meet statutory and regulatory requirements</li> <li>• Record and store data, perform calculations of scientific quantities and present information in maps, diagrams, tables and graphs</li> <li>• Report using verbal responses, data entry into the enterprise information management system and brief written reports</li> <li>• Contribute information to reports for clients</li> <li>• Liaise with contractors, consultants, community representatives, regulator representatives and members of the public</li> </ul>



<b>Employability Skill</b>	<b>Industry requirements for MSS50222 Diploma of Environmental Monitoring and Technology</b>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Work effectively with team members who may have diverse work styles, cultures and perspectives when reporting problems, hazards and environmental incidents and results or contributing to system improvements</li> <li>• Promote cooperation and good relations in the team</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Adjust sampling/monitoring procedures or substitute alternative instruments and measurement standards to suit local site conditions (but within scope of responsibility/technical competence)</li> <li>• Recognise potential or actual environmental management non-conformances, assess their significance and recommend preventative or corrective actions</li> <li>• Apply specialised technical knowledge to critically analyse and resolve complex problems and non-conformances where solutions are not obvious or readily available</li> <li>• Troubleshoot sampling/monitoring equipment and instruments in the field and make basic repairs</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Recommend appropriate preventative/corrective actions to improve sampling, field testing and/or monitoring activities</li> <li>• Identify hazards associated with samples, sample collection methods, reagents and equipment and implement enterprise control measures</li> <li>• Research current, alternative sampling/monitoring methods and equipment</li> <li>• Research environmental monitoring and management case studies and models of good practice</li> <li>• Suggest improvements in productivity and quality</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Plan surveys and field studies</li> <li>• Identify, assemble, check and stow all required field equipment and materials for safe transport</li> <li>• Modify work plans to suit changing conditions and priorities</li> <li>• Assemble, organise, check and optimise monitoring equipment for specific sites or use</li> <li>• Plan work sequences to optimise efficiency without sacrificing quality</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Communicate in an efficient and polite manner, taking into account cultural diversity and disabilities and the wide range of views that stakeholders may have about environmental issues</li> <li>• Follow enterprise procedures which reflect equal opportunity, anti-discrimination and non-harassment legislative requirements</li> <li>• Conduct work based on ethical values and principles and ensure quality and integrity of own work</li> <li>• Review own strengths, weaknesses and work practices for opportunities to continuously improve performance</li> <li>• Maintain security and confidentiality of all client/enterprise data and information</li> <li>• Regularly (re)assess risks; step back and consider options; and use controls, safe work procedures and appropriate personal protective equipment to ensure personal safety</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Seek and respond to feedback from supervisor and other site personnel about performance</li> <li>• Update knowledge and skills and take advantage of skill development opportunities</li> <li>• Provide information to other site personnel about their environmental management obligations</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Select and use computers and software to collect, process, present, report and/or store information</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS50222 Diploma of Environmental Monitoring and Technology</b>
	<ul style="list-style-type: none"> <li>• Select, use and optimise sampling and monitoring equipment, field-test instruments, data loggers and/or remote sensing equipment</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS50322 Diploma of Competitive Systems and Practices</b>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Manage implementation of WHS procedures and develop and distribute related safety information</li> <li>• Develop standardised documentation on behalf of an area or group of work teams</li> <li>• Share and discuss information with others about enterprise activities</li> <li>• Develop and communicate workplace procedures</li> <li>• Provide information and clarifications to team leaders and other employees on workplace procedures</li> <li>• Provide and interpret instructions, specifications, standard operating procedures and other work-related documents</li> <li>• Provide assistance or information to relevant personnel</li> <li>• Debrief on workplace changes with relevant stakeholders</li> <li>• Record production or other work-related information</li> <li>• Access and use workplace communication tools and equipment</li> <li>• Apply numeracy skills to work procedures</li> <li>• Provide information about team activities to managers, supervisors and customers</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Identify roles of work teams where teamwork is used as the form of work organisation</li> <li>• Supervise and lead others in a production environment</li> <li>• Share work related information with peers, including team members, supervisors and management</li> <li>• Identify hazards to employees and visitors</li> <li>• Identify the value chain and advise other employees as to how they can contribute to the final quality of the product</li> <li>• Review changes to work practices and work relationships with team leaders and other employees</li> <li>• Provide assistance with planning work operations, as required</li> <li>• Seek assistance with work operations from specialists and other employees, as required</li> <li>• Participate in multidisciplinary teams, as required</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Monitor operations, administration, logistics and maintenance activities</li> <li>• Analyse inconsistencies, non-compliances, faults or hazards</li> <li>• Identify factors within work area that are a constraint to work efficiency or reaching of production outcomes</li> <li>• Identify essential and non-essential practices</li> <li>• Implement methods of increasing features/benefits of products or processes</li> <li>• Monitor responsibilities of teams and make improvements to work organisation</li> <li>• Identify process steps which cause a problem and implement improvement processes</li> <li>• Monitor WHS performance and implement WHS improvement processes</li> <li>• Compare shift or area required performance with actual performance</li> <li>• Identify situations where compliance to specifications or safety standards is unlikely</li> <li>• Identify, recommend and implement improvements</li> <li>• Distinguish between random and identifiable causes of work problems</li> </ul>

Employability Skill	Industry requirements for MSS50322 Diploma of Competitive Systems and Practices
	<ul style="list-style-type: none"> <li>• Identify causes of identified faults and take appropriate action</li> <li>• Investigate causes of quality deviations</li> <li>• Undertake root cause analysis (RCA)</li> <li>• Identify deviations and fault patterns</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Manage procedures and systems for optimum outcomes</li> <li>• Analyse feedback on procedures and systems</li> <li>• Analyse problems, implications or suggestions for improvements</li> <li>• Adjust work activities according to changes in customer requirements</li> <li>• Identify methods of increasing contribution of work teams to the value chain</li> <li>• Identify and implement changes and improvements</li> <li>• Monitor processes and equipment to ensure cost-efficiency</li> <li>• Manage 5S procedures</li> <li>• Implement and monitor work practices to reduce waste</li> <li>• Participate in multidisciplinary teams to develop new products or processes</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Plan work of teams to meet required standards</li> <li>• Ensure work areas comply with WHS procedures</li> <li>• Identify and manage processes, tools and materials</li> <li>• Implement improvements in accordance with procedures</li> <li>• Monitor and adjust production/process</li> <li>• Distinguish between essential and non-essential practices</li> <li>• Implement use of planning tools within work of teams</li> <li>• Monitor implementation of 5S procedures in teams</li> <li>• Determine and prioritise required actions</li> <li>• Collect, organise and analyse information from work activities</li> <li>• Monitor work activities according to safety and workplace standards</li> <li>• Set production targets and outcomes</li> <li>• Interpret data and information as required by own job</li> <li>• Ask questions to ensure there is understanding of work requirements in teams and among other employees</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Recommend methods of increasing own contribution to the value chain</li> <li>• Adjust work processes according to procedures and customer requirements</li> <li>• Identify and manage impact of change in own work</li> <li>• Minimise waste in own work activity</li> <li>• Assess own work performance</li> <li>• Set personal objectives for work performance</li> <li>• Manage own time</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Identify skill requirements of self and team members</li> <li>• Arrange skill development training for self and others</li> <li>• Adapt to changing work requirements</li> <li>• Ask questions to aid learning of others</li> <li>• Identify personal skill gaps and additional skill needs</li> <li>• Ask questions to ensure understanding of own work requirements</li> <li>• Monitor own work and identify areas for improvement</li> <li>• Seek feedback on work performance</li> <li>• Provide feedback on work performance to team leaders and team members</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Monitor technology to ensure safety according to legislative requirements and workplace standards</li> <li>• Identify equipment and processes appropriate for jobs and skill levels of employees</li> <li>• Provide appropriate equipment to ensure safety and efficiency</li> </ul>

Employability Skill	Industry requirements for MSS50322 Diploma of Competitive Systems and Practices
	<p>according to skill levels of employees</p> <ul style="list-style-type: none"> <li>• Assess operational efficiency of technology within own skill level and that of team members</li> <li>• Act on reports of faulty operation of equipment</li> <li>• Analyse data and other information from equipment reports</li> <li>• Conduct failure mode effects analyses</li> <li>• Use information technology appropriate for job</li> <li>• Manage maintenance procedures appropriate to job and processes according to skill levels of team members</li> </ul>

Employability Skill	Industry requirements for MSS80322 Graduate Certificate in Competitive Systems and Practices
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Consult with internal and external stakeholders on the implementation of change</li> <li>• Communicate processes and goals to managers, other employees and members of the value chain</li> <li>• Use interpersonal and language skills to encourage collaboration</li> <li>• Identify new improvement opportunities through discussion with team members</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Cultivate collaboration and participation in change processes</li> <li>• Meet with stakeholders to resolve problems</li> <li>• Establish support and ownership among stakeholders for future state objectives</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Collect, analyse and interpret data</li> <li>• Determine root causes of non-conformances</li> <li>• Evaluate options for improvements to standardised work</li> <li>• Analyse effects of potential and actual equipment failures</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Ensure data collection and feedback mechanisms are established for all change implementation processes</li> <li>• Provide leadership during major non-conformances</li> <li>• Identify and implement process improvements</li> <li>• Use analytical and decision making skills to prioritise improvement activities</li> <li>• Adjust and implement production schedules changes</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Identify data requirements to determine current and future states</li> <li>• Organise data collection systems</li> <li>• Establish team responsibilities for implementation of change</li> <li>• Plan change implementation strategy and identify risk factors</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Manage own time and establish own work schedule</li> <li>• Monitor and evaluate own work quality</li> <li>• Maintain professional and ethical standards in own work</li> <li>• Comply with legislative requirements, codes of practice and organisational policies and procedures</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Identify opportunities for individual and organisational learning</li> <li>• Use feedback from others to establish improvement processes</li> <li>• Record learning according to organisational procedures</li> <li>• Ensure stakeholders are able to access and apply relevant knowledge/learning</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Analyse systems and technology implications of change options</li> <li>• Implement procedures to monitor and record equipment availability, performance and availability</li> <li>• Determine systems compatibility with other members of the value chain</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS80322 Graduate Certificate in Competitive Systems and Practices</b>
	<ul style="list-style-type: none"> <li>• Use record keeping equipment and programs</li> </ul>

<b>Employability Skill</b>	<b>Industry requirements for MSS80422 Graduate Diploma of Competitive Systems and Practices</b>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Consult with internal and external stakeholders on the implementation of change</li> <li>• Communicate processes and goals to managers, other employees and members of the value chain</li> <li>• Use interpersonal and language skills to encourage collaboration</li> <li>• Through discussion with team members, identify new improvement opportunities</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• Cultivate collaboration and participation in change processes</li> <li>• Meet with stakeholders to resolve problems</li> <li>• Establish support and ownership among stakeholders for future state objectives</li> </ul>
<b>Problem-solving</b>	<ul style="list-style-type: none"> <li>• Collect, analyse and interpret data</li> <li>• Determine root causes of non-conformances</li> <li>• Evaluate options for improvements to standardised work</li> <li>• Analyse effects of potential and actual equipment failures</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• Ensure data collection and feedback mechanisms are established for all change implementation processes</li> <li>• Provide leadership during major non-conformances</li> <li>• Identify and implement process improvements</li> <li>• Use analytical and decision making skills to prioritise improvement activities</li> <li>• Adjust and implement production or process schedule changes</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• Identify data requirements to determine current and future states</li> <li>• Organise data collection systems</li> <li>• Establish team responsibilities for implementation of change</li> <li>• Plan change implementation strategy and identify risk factors</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• Manage own time and establish own work schedule</li> <li>• Monitor and evaluate own work quality</li> <li>• Maintain professional and ethical standards in own work</li> <li>• Comply with legislative requirements, codes of practice and organisational policies and procedures</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Identify opportunities for individual and organisational learning</li> <li>• Use feedback from others to establish improvement processes</li> <li>• Record learning according to organisational procedures</li> <li>• Ensure stakeholders are able to access and apply relevant knowledge/learning</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Analyse systems and technology implications of change options</li> <li>• Implement procedures to monitor and record equipment availability, performance and availability</li> <li>• Determine systems compatibility with other members of the value chain</li> <li>• Use record keeping equipment and programs</li> </ul>

## Appendix 6: Terms and definitions

### *Competitive Systems and Practices*

Competitive Systems and Practices – focuses on the application of ‘lean’ and continuous improvement principles across all parts of an organisation’s supply and value chain. This includes the skills to:

- reduce waste and inefficiencies (such as wasted time and energy, unnecessary processing and product features, stockpiles of materials and inventory, poor use of human resources and errors and rework)
- identify and analyse problems
- measure and improve performance
- create consistent and integrated systems and processes
- continuously improve productivity and sustainability.

Term	Definition
Agile	The use of structured Agile processes, roles and responsibilities to deliver customer value via iterations and increments (subprojects).
Assignable cause	Any non-random variation is said to have an ‘assignable cause’. The methods of data analysis common to statistical capability analysis as well as other methods of root cause analysis should be used to determine the cause of this non-random variation.
Balanced Scorecard	An approach to competitive systems and practices that sets out an organisations vision and strategy by establishing and measuring enterprise activity in a number of different perspectives in addition to the normal financial perspective. Perspective areas include: <ul style="list-style-type: none"> <li>• customer</li> <li>• environmental</li> <li>• internal business process</li> <li>• learning and growth.</li> </ul> For each perspective area the Balanced Scorecard emphasises establishing and measuring performance (metrics).
Benefits	Positive benefits as well as negative benefits, such as quality, safety, reliability and similar issues, which may be impacted by a cost saving.
Boundaries	Define the extent and limits of the activity/event/ analysis. Typically they define: <ul style="list-style-type: none"> <li>• the start and end point of the process being targeted</li> <li>• the steps of the process to be included and excluded</li> <li>• specific job roles or related processes to be included or excluded</li> <li>• timeframe.</li> </ul>
Breakthrough improvement	Kaizen blitz - a process that delivers a better ratio of value-add to non-value add from the customer perspective. It is characterised by: <ul style="list-style-type: none"> <li>• using a formal process</li> <li>• being a discrete targeted activity that is achieved in a relatively short timeframe</li> <li>• delivering significant level of improvement.</li> </ul>

Term	Definition
Buffer	Buffer refers to the slack time required in the system to protect the capacity constrained resource (drum) against disruption (in a physical process this is usually represented by work in progress).
Cause tree	<p>The series of causes is referred to as the cause tree. Not all root causes are accessible and able to be eliminated. Breaking the cause tree in such a way that the problem cannot recur is an acceptable alternative.</p> <p>Not all situations can wait for the RCA and eventual elimination of the root cause as there may be serious current impacts. The quick fix will control these immediate impacts but does not eliminate the root cause.</p>
Change	<ul style="list-style-type: none"> <li>• to equipment, operations, procedures or practice</li> <li>• arise from continuous improvement (or an improvement event or project)</li> <li>• to logistics, communication systems (e.g. ordering, supplying and quality certification)</li> <li>• include kanban/systems, SCADA supply/ resupply systems across the chain</li> <li>• may have been intended to make an improvement or to implement new products, technology or systems</li> <li>• include the implementation of a change.</li> </ul> <p>Changes do not include an engineering or technical review of a major capital expenditure or similar review.</p>
Changeover	<p>A changeover occurs when a person is required to work on more than one product and to change between them as part of the work role. The product may be a physical or non-physical product.</p> <p>Internal and external changeover activities:</p> <ul style="list-style-type: none"> <li>• Internal changeover activities are defined as work that can be done only when the machine or process is not actively engaged in production (i.e. only while the changeover is occurring).</li> <li>• External changeover activities are defined as work that can be done concurrently with the machine or process performing production/work duties (i.e. either before or after the changeover proper).</li> </ul>
Compatible families	Products/classes requiring identical or similar operations equipment, technology or processes.
Competitive Systems and Practices	<p>A broad collective term intended to encompass the flexible application of various tools, techniques, systems and approaches that have synergies around continuous improvement, efficiency, business improvement or similar goals.</p> <p>This term is used as a 'place holder' within the units of competency and user can decide which systems/practices/tools are relevant to the work context and the unit of competency.</p> <p>The intent is that learners understand and apply the selected systems/practices/tools rather than the concept of 'Competitive Systems and Practices' itself.</p>
Competitive Systems and Practices approach	The combination of concepts, strategies, systems, practices, tools and so on, selected by an organisation.
Condition monitoring	<p>Condition monitoring often involves quite sophisticated monitoring of equipment, including such things as:</p> <ul style="list-style-type: none"> <li>• vibration monitoring</li> <li>• instrumental analysis of lubricating oil, and so on, to determine the current state of the equipment, monitor the change in this condition, and predict when it needs servicing/maintenance to maintain reliability.</li> </ul>
Constraint	<p>A constraint is anything in the organisation that prevents or makes it harder for the organisation to achieve improved performance. Constraints may be:</p> <ul style="list-style-type: none"> <li>• internal or external to the organisation</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• physical (equipment or material-based)</li> <li>• process-based (inefficient or wrong processes/policies/logistics)</li> <li>• people-based (poor training, communication)</li> <li>• market based (lack of demand).</li> </ul>
Constraint – external	Where the organisation is producing more (product or services) than are wanted by customers.
Constraint – internal	Where customers demand more than the organisation can deliver (e.g. product, performance and/or quality).
Constraint/capacity constrained resource	A capacity constrained resource refers to the step in a process or part of a system which limits the output of the entire system or process (colloquially known as a bottleneck).
Continuous improvement	Kaizen - part of normal work and does not require a special event to occur (although may still require authorisations) and contrasts with breakthrough improvement/kaizen blitz which occurs by way of an event or project.
Contributing and non-contributing cost components	<p>Contributing costs include:</p> <ul style="list-style-type: none"> <li>• costs that make a direct contribution to customer features/benefits. These costs continue to need to be incurred (although they may be minimised) in order to gain the customer feature/benefit.</li> </ul> <p>Non-contributing costs include:</p> <ul style="list-style-type: none"> <li>• other costs that do not contribute to customer features/benefits. These may be costs that must be maintained, such as regulatory compliance and work health and safety (WHS) costs and other costs which are not required and do not contribute to customer features and so should be eliminated if possible (this is also defined in terms of muda).</li> </ul>
Control chart	<ul style="list-style-type: none"> <li>• run</li> <li>• tally</li> <li>• mean/range</li> <li>• attributes</li> <li>• other relevant charts.</li> </ul>
Cost components	<ul style="list-style-type: none"> <li>• fixed and variable costs, such as power/energy, materials, plant and equipment, production or process time, including impact on salary and wages</li> <li>• office expenses, such as telephone</li> <li>• government taxes and charges</li> <li>• the monetary value of expenditures able to be directly identified for supplies, services, direct labour, components, cost of inventory, faults and reworks, rejects/scrap, equipment and other items used in the production of the product</li> <li>• allocations and estimates for indirect costs (e.g. indirect labour, rent, power and water) where a direct monetary value cannot be identified.</li> </ul>
Cost of non-conformance	<ul style="list-style-type: none"> <li>• reprocessing/rework</li> <li>• expediting</li> <li>• unplanned service</li> <li>• excess inventory</li> <li>• complaint handline</li> <li>• downtime</li> <li>• returns</li> <li>• scrap</li> <li>• labour costs</li> <li>• material costs</li> <li>• infrastructure costs/overhead</li> <li>• utility costs.</li> </ul>
Customer features/ benefits	Characteristics of the product or service which add value to the customer, this value may be assessed in financial or features terms.



Term	Definition
Customer perceived value and Customer benefit (expected customer perceived value)	<p>Any feature, benefit or aspect of the process, product or service which the customer sees as providing value (is willing to pay for). Typically not the same as 'features' which the customer may or may not value.</p> <p>Requires knowledge about customer perceptions which may come from a range of sources e.g. formal feedback, informal discussions with customers, market research, analysis of complaints/tickets etc. Some units may require a formal/quantitative approach.</p> <p>'Customer benefit' refers to expected value to the customer and does not require verification of customer perspectives of value (perceived value).</p>
Customer related targets	Internally set financial and operational targets that contribute to meeting customer features/benefits.
Customers	<ul style="list-style-type: none"> <li>• internal or external customers and should be sufficiently close to the individual's work as to be easily identifiable</li> <li>• final customers used as the basis for the identification of value and waste.</li> </ul> <p>Where the candidate does not/can not interface directly with external customers, they should be provided with sufficient information to enable them to identify expected customer benefits and, where required, customer perceived value.</p>
Deliverables	The planned/intended measurable outcomes that are produced by processes (any section of the value stream) and that are desired/required by the customer.
Delivery schedule	Delivery schedule refers to what the system/ process is actually able to deliver from the capacity constrained resource once it has been appropriately buffered and supplied.
DMAIC	<ul style="list-style-type: none"> <li>• define</li> <li>• measure</li> <li>• analyse</li> <li>• improve</li> <li>• control and standardise.</li> </ul>
Drum	The capacity constrained resource is often referred to as the drum, as its output provides the 'drumbeat' for the output of the entire system or process.
Drum-buffer-rope	Drum-buffer-rope (choke/release) is a system to avoid flooding the system with inventory. Raw materials are released at a rate which the constraint can cope (i.e. to a rhythm set by the drum). A buffer is placed in front of the constraint and strictly managed to protect capacity loss.
Energy trading	<ul style="list-style-type: none"> <li>• the buying of energy through alternative suppliers and tender processes</li> <li>• selling of excess energy produced by the organisation to energy companies or other producers</li> <li>• internal trading of excess energy from one area to an energy consuming area elsewhere in the organisation.</li> </ul>
Experiment objective	<ul style="list-style-type: none"> <li>• screen factors to find the critical few</li> <li>• optimise a few critical factors</li> <li>• solve process problems</li> <li>• reduce waste</li> <li>• increase reliability.</li> </ul>
Factorial design	<ul style="list-style-type: none"> <li>• 2/3 level factorial</li> <li>• Taguchi L8</li> <li>• 2/4-1 half fraction</li> <li>• Plackett-Burman 8-run</li> <li>• full factorial.</li> </ul>
Flow authorisation	Flow authorisation refers to a system which authorises the worker to make a product without reference to another authority.
Flow authorisation indicator	Flow authorisation indicator may include:

Term	Definition
	<ul style="list-style-type: none"> <li>• kanban bin, ticket or similar</li> <li>• other indicator of demand pull.</li> </ul>
FMEA	<p>Failure mode effects analysis (FMEA) is a systematic approach that identifies potential failure modes in a system, product, or operations/assembly operation caused by either design or operations/assembly process deficiencies. It also identifies critical or significant design or process characteristics that require special controls to prevent or detect failure modes. FMEA is a tool used to prevent problems from occurring.</p> <p>Some industry sectors have highly adapted forms of FMEA and may practice traditional FMEA in say their routine maintenance while using another technique, such as Hazard and Operability Studies (HAZOP) for design and modification.</p> <p>HAZOP is a form of FMEA which has been practiced by the process industries for over 30 years and examines the implications of changes in process conditions to process stability.</p>
Identifiable cause	<p>Identifiable cause (also referred to as assignable cause or special cause) refers to those variations for which a cause can be found and so the cause of the variation eliminated, or where there is a discernible trend/pattern system and so a cause can be postulated and then identified after investigation.</p>
Imposed exclusions	<p>Imposed exclusions are wastes (muda) that are required but do not add value. They should be formally identified as muda in the competitive systems implementation. Examples include:</p> <ul style="list-style-type: none"> <li>• equipment excluded from efficiency or layout review because of budget constraints, licences, and so on</li> <li>• regulatory requirements that do not add value</li> <li>• enterprise requirements, policies or procedures beyond the influence of the team.</li> </ul>
Improvements	<p>Any change aimed at reducing muda:</p> <ul style="list-style-type: none"> <li>• techniques for preventing mistakes by designing the operations process, equipment and tools so that an operation literally cannot be performed incorrectly (e.g. baka-yoke)</li> <li>• techniques that generate warning signals were a mistake is about to be performed (poka-yoke).</li> </ul>
Increment (Agile)	<p>A complete feature or subset of a product or service; a fully working slice or section of the end 'product'.</p> <p>An increment should contribute to (and be tested as) part of the 'working whole'. An increment may be conceptualised as a subproject and will have multiple iterations.</p>
Indicator of demand	<p>In continuous operations organisations, production is measured in terms of production rate (e.g. kg/h, tonne/day) and rate is increased/decreased according to the flow authorisation which may be a kanban (e.g. ticket, order from a supplier) or may be a SCADA signal from a remote facility (e.g. customer tank) saying that resupply is required or similar.</p>
Infrastructure	<ul style="list-style-type: none"> <li>• physical infrastructure, including plant, equipment, tools, systems and processes</li> <li>• information and control infrastructure such as quality assurance, statistical process control (SPC)/six sigma, planning systems/software, data collection and control systems/software</li> <li>• policies and procedures</li> <li>• materials, energy, utilities and other consumables</li> <li>• work organisation, including numbers of employees, organisation structure, work structure, and skills and knowledge held by employees, and competency mix</li> <li>• workforce development and, where required, training.</li> </ul>

Term	Definition
Initiation of change	<p>A change may have been deliberately initiated to improve capability, deal with a problem, or a similar intended change. Where a change was not deliberately initiated then the causal factors for the change need to be identified and may include:</p> <ul style="list-style-type: none"> <li>• a drift in efficiency or quality</li> <li>• a change in materials, rate of supply, quality of supply, or, components which was being compensated for</li> <li>• a change in personnel which brought different practices.</li> </ul>
Iteration (Agile)	<p>A cycle or refinement of work which delivers a releasable version of an 'increment'; and which informs future work. Typically managed in 'sprints'.</p>
JIT	<p>JIT (Just In Time) refers to a production scheduling concept that calls for any item needed at a production operation (whether raw material, finished item, or anything in between) to be produced and available precisely when needed, neither a moment earlier nor a moment later.</p>
Job conflicts	<ul style="list-style-type: none"> <li>• cycle time (mean time taken to actually do the job) is longer than takt time</li> <li>• multiple jobs required in the same timeframe (i.e. priority conflict)</li> <li>• takt time cannot be met with resources available</li> <li>• takt time is longer than available time.</li> </ul>
Kanban	<p>Kanban refers to a card or sheet used to authorise production or movement of an item and may vary in format or content between organisations and departments.</p> <p>Kanban operates according to the following rules:</p> <ul style="list-style-type: none"> <li>• all production and movement of parts and material take place only as required by a downstream operation (i.e. all operations and procurement are ultimately driven by the requirements of final assembly or the equivalent)</li> <li>• the specific tool which authorises production or movement is called a kanban. The word literally means card or sign, but it can legitimately refer to a container or other authorising device. Kanban have various formats and content as appropriate for their usage (e.g. a kanban for a vendor is different than a kanban for an internal machining operation).</li> </ul>
Knowledge capture systems	<p>Systems for the capture of knowledge may be paper based electronic or other and may include:</p> <ul style="list-style-type: none"> <li>• clip boards on the line</li> <li>• problem-solving templates</li> <li>• procedures templates</li> <li>• whiteboards/other noticeboards</li> <li>• databases and other electronic records</li> <li>• incident reports</li> <li>• maintenance requests.</li> </ul> <p>They may have as part of them a method of knowledge retrieval and possibly of searching, filing and cataloguing.</p>
Knowledge records	<p>Appropriate records include systems which ensure knowledge:</p> <ul style="list-style-type: none"> <li>• is not just retained by an individual</li> <li>• is available to others</li> <li>• survives beyond the departure of individual</li> <li>• has an allocated a level of importance.</li> </ul>
KPIs	<p>Financial and non-financial performance measures against targets. Other performance indicators relevant for informing the teams activities (e.g. performance indicators for other areas or sections, suppliers or customers). Uses metrics, such as:</p> <ul style="list-style-type: none"> <li>• process/cycle time, lead time, response time and value-add time</li> <li>• changeover time between different work processes</li> <li>• customer demand rates</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• inventory/work in progress/inbox</li> <li>• equipment/technology access and reliability</li> <li>• energy use</li> <li>• waste to landfill</li> <li>• percentage complete and accurate.</li> </ul>
Lead implementation	<ul style="list-style-type: none"> <li>• having formal leadership responsibility, such as a team leader or</li> <li>• individuals who are required to have the ability to lead by example and mentor others, such as: <ul style="list-style-type: none"> <li>○ experienced or senior operators</li> <li>○ specialists who must use their technical expertise to facilitate implementation of competitive systems and practices.</li> </ul> </li> </ul>
Limiting factors – external	<p>Lack of bargaining power or effective communication with:</p> <ul style="list-style-type: none"> <li>• suppliers</li> <li>• customers</li> <li>• financial institutions</li> <li>• other factors.</li> </ul>
Limiting factors – internal	<ul style="list-style-type: none"> <li>• free cash</li> <li>• management time and expertise</li> <li>• machinery</li> <li>• work organisation and workforce skills and knowledge.</li> </ul>
Maintenance strategies and techniques	<ul style="list-style-type: none"> <li>• total productive maintenance (TPM)</li> <li>• reliability centred maintenance (RCM)</li> <li>• root cause analysis (RCA)</li> <li>• mean time between failures (MTBF)</li> <li>• failure mode and effects analysis (FMEA)</li> <li>• condition monitoring.</li> </ul>
Major non-conformance	<ul style="list-style-type: none"> <li>• a failure to receive a delivery</li> <li>• receiving a delivery which is out of specification</li> <li>• a failure of the transport system to make deliveries to customers or from suppliers</li> <li>• a problem in the process which fails to produce product or only produces non-conforming product</li> <li>• a major incident, such as a fire or loss of containment</li> <li>• a breakdown of critical plant/equipment</li> <li>• a commercial or legal problem which affects the ability to produce to requirements</li> <li>• excessive absences of key personnel due to illness or transport breakdown</li> <li>• a security situation preventing key personnel from performing their duties and/or deliveries being made</li> <li>• a major supply shortage or price increase.</li> </ul>
Manager	<p>Any person who may have either a permanent or an ad hoc role in facilitating the function of multiple teams in a workplace, department or entire organisation.</p>
Measuring improvement/performance	<ul style="list-style-type: none"> <li>• personally taking measurements</li> <li>• arranging for measurements to be taken/made by appropriate personnel.</li> </ul>
Mechanisms – monitoring	<ul style="list-style-type: none"> <li>• scheduled audits</li> <li>• regular monitoring and/or reporting activities</li> <li>• communications, such as standing items for team meetings</li> <li>• tracking and visual display of performance measures.</li> </ul>
Mechanisms – sustaining	<ul style="list-style-type: none"> <li>• scheduled audits</li> <li>• regular monitoring and/or reporting activities</li> <li>• use of visual aids, such as targets and progress boards, process charts and procedure posters</li> <li>• communications, such as standing items for team meetings, email</li> </ul>

Term	Definition
	reminders or updates.
Mistake proofing	<p>Actions taken to reduce or prevent errors or mistakes.</p> <p>Some people distinguish between:</p> <p>Poka Yoke (mistake proofing) – focus on ‘process’ and eliminating mistakes eg physical barriers,</p> <p>Baka Yoke (idiot proofing) – focus on ‘people’ and eliminating errors eg training, visual reminders.</p> <p>The latter term became unpopular as it was seen to be ‘blaming’ people rather than focusing on people strategies.</p>
Mistake proofing, error proofing, Baka-yoke, poka-yoke	<p>Mistake proofing is based on the concept of zero defects. The first priority is to eliminate the possibility of an error occurring. However, where this is not feasible mistake proofing can be used to reduce the occurrence of errors and/or to minimise their impact.</p> <p>Mistake proofing should target an error in the following priority order:</p> <ul style="list-style-type: none"> <li>• eliminate the possibility of the error via changes to the process</li> <li>• prevent the error from occurring via physical or virtual barriers</li> <li>• reduce likelihood of the error by encouraging correct action</li> <li>• mitigate the impact of the error if it does occur.</li> </ul>
MTBF	<p>Mean time between failures (MTBF) is one key measure of the effectiveness of a maintenance procedure, and is an indicator as to whether root causes are being found and resolved. If MTBF is reducing, then it is an indicator that the maintenance regime is failing.</p> <p>There are many possible causes of any problem. Eliminating some will have no impact, others will ameliorate the problem. However, elimination of the root cause will eliminate the problem. There should only be one root cause for any problem and so the analysis should continue until this one cause is found. Elimination of the root cause permanently eliminates the problem.</p> <p>Depending on the equipment, operations and procedures of the organisation, alternative statistical records of maintenance and maintenance related events may be substituted for MTBF providing they relate strategies for improving OEE.</p>
Muda	<p>Any activity which does not contribute to customer benefit/features in the product, i.e. do not yield any benefit to the organisation or any benefit to the organisation’s customers. Categories of waste include:</p> <ul style="list-style-type: none"> <li>• overproduction – excess production and early production</li> <li>• waiting – delays</li> <li>• movement and transport</li> <li>• inappropriate processing – poor process design</li> <li>• unnecessary inventory</li> <li>• excess motion – inefficient performance of a process</li> <li>• making defective items</li> <li>• underutilised employees.</li> </ul>
Necessary waste	<p>Necessary waste includes any activity or cost which does not contribute directly to customer benefit/feature in the product, and which cannot be avoided (e.g. regulatory compliance and fixed costs). Necessary waste cannot be eliminated but should be managed.</p>
OEE	<p>Overall equipment effectiveness (OEE) is the combination of the main factors causing loss of productive capacity from equipment/plant and is:</p> <ul style="list-style-type: none"> <li>• <math>OEE = \text{availability} \times \text{performance} \times \text{quality rate}</math></li> <li>• where: <ul style="list-style-type: none"> <li>○ availability takes into account losses due to breakdown, set-up and adjustments</li> <li>○ performance takes into account losses due to minor stoppages, reduced speed and idling</li> </ul> </li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>○ quality rate takes into account t losses due to rejects, reworks and start-up waste.</li> </ul>
Optimum use of capacity	Optimum use of capacity refers to ensuring the capacity constrained resource is not diverted or prevented from producing at its limit.
Overall cost	<ul style="list-style-type: none"> <li>● the assessment of negative and positive financial implications</li> <li>● negative long-term issues, such as work health and safety (WHS), environmental and regulatory issues.</li> </ul>
Pacemaker processes	Pacemaker processes refer to process or scheduling points which sets the pace for the flow of operations through the enterprise. It needs to be distinguished from processes which are temporarily setting the pace for other processes because of faults, breakdowns, inefficiencies, poor design and/or waste. These should be categorised as bottlenecks and made targets for corrective action.
Performance	<ul style="list-style-type: none"> <li>● the rate of output of the plant compared to the rate required to meet demand</li> <li>● takt, where takt time is the allowable time to produce one product at the rate and quality customers are demanding it (this is NOT the same as cycle time, which is the normal time to complete an operation on a product – which should be less than or equal to takt time)</li> <li>● for office processes should relate to customer requirements and be measurable. Examples include: <ul style="list-style-type: none"> <li>○ lead time</li> <li>○ processing time</li> <li>○ percentage complete and accurate</li> <li>○ changeover time for equipment and processes</li> <li>○ hours office staff can be contacted by customers</li> <li>○ hand off processes</li> <li>○ distance and frequency of movement.</li> </ul> </li> </ul>
Pitch	Pitch is the takt time averaged over a defined period and with available resources giving the rate of flow required to meet customer demand.
Planning software	Planning software includes software systems which integrate a range of business information, such as finance, logistics maintenance and production (frequently referred to as ERP, MRP, MRPII or a range of proprietary names).
Practices	Practical <b>techniques and tools</b> that form part of (help implement) the systems. Examples include: <ul style="list-style-type: none"> <li>● VSM</li> <li>● Supply, value, and demand chain monitoring and analysis</li> <li>● Process mapping</li> <li>● 5S</li> <li>● Just in Time (JIT), Kanban tickets and customer pull techniques</li> <li>● Kanban boards</li> <li>● Statistical process control tools, including six sigma and three sigma, run charts</li> <li>● Mistake proofing</li> <li>● Kaizen and kaizen blitz</li> <li>● Elimination of waste/muda</li> <li>● Standardisation</li> <li>● Scrum, Sprint &amp; Backlog</li> <li>● Rule of 3</li> <li>● Agile project management</li> <li>● Strategy deployment</li> </ul>
Process	Process includes all functions that go to meet customer requirements as well as other required functions (e.g. regulatory related functions). Examples include:

Term	Definition
	<ul style="list-style-type: none"> <li>• design</li> <li>• production</li> <li>• maintenance</li> <li>• logistics</li> <li>• office processes</li> <li>• other support process in an organisation.</li> </ul>
Process capability	<ul style="list-style-type: none"> <li>• the capability of the process to deliver to customer defined requirements</li> <li>• process stability against standardised practices and documentation to eliminate variation against customer requirements</li> <li>• the measurable ability of a process to reliably produce within calculated limits (the limits depend on the variation of the process).</li> </ul> <p>Process capability is frequently determined using three or six sigma methods.</p>
Process mapping aspects	<ul style="list-style-type: none"> <li>• process activities</li> <li>• flow of information and/or documents</li> <li>• decision points</li> <li>• ranking of process steps into: <ul style="list-style-type: none"> <li>• essential (process essential for achieving outcomes/goals)</li> <li>• important (process which improves outcomes/goals through greater speed or quality)</li> </ul> </li> <li>• process activities</li> <li>• flow of information and/or documents</li> <li>• decision points</li> <li>• ranking of process steps into: <ul style="list-style-type: none"> <li>• essential (process essential for achieving outcomes/goals)</li> <li>• important (process which improves outcomes/goals through greater speed or quality).</li> </ul> </li> </ul>
Process mapping techniques	<p>Flow chart/mapping techniques may be undertaken using appropriate software or as hard copy to create a visual representation of the process. Techniques include:</p> <ul style="list-style-type: none"> <li>• supplier-input-process-output-customer (SIPOC)</li> <li>• high-level process map</li> <li>• process flow chart</li> <li>• top down</li> <li>• responsibility matrix</li> <li>• document map</li> <li>• cross-functional or swim lanes process map</li> <li>• work flow diagram.</li> </ul> <p>The technique will typically define a method for visually representing the process such as a set of symbols or layout for a word document, spreadsheet or drawing.</p> <p>Software applications may include:</p> <ul style="list-style-type: none"> <li>• Visio</li> <li>• computer-aided design/drafting (CAD) programs</li> <li>• Microsoft Project</li> <li>• other graphic, modelling or flow chart applications.</li> </ul>
Pull system	<p>A pull system refers to an operations planning system based on making on demand, as opposed to a push system based on making for stock using a sales forecast.</p>
Qualitative research	<p>Qualitative research aims to gather information that may not be apparent from quantitative analysis techniques including the why and how of events relating to the change process. Examples of information gathered include:</p> <ul style="list-style-type: none"> <li>• employee support for a change before and after the change</li> <li>• other stakeholder support</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• understanding of employees of the intended benefits and the situation after the change</li> <li>• customer support for change</li> <li>• testing of possible contingencies and scenarios in the change process, including non-conformances (e.g. impact of breakdowns and absences).</li> </ul>
Quick changeover	<p>In competitive systems and practices equipment-based quick changeover techniques in manufacturing can often be referred to under different names, for example:</p> <ul style="list-style-type: none"> <li>• single minute exchange of die (SMED) – the term originated with die changeovers but now often refers to the ability to perform any set-up activity in a minute or less of machine or process downtime</li> <li>• single-digit set-up – performing a set-up activity in a single-digit number of minutes (i.e. fewer than ten)</li> <li>• one touch exchange of die (OTED) – literally, changing a die with one physical motion, such as pushing a button; broadly, an extremely simple procedure for performing a set-up activity.</li> </ul>
Quick fix	<p>A quick fix is not a short cut or side step for a permanent solution to the root cause. It is a necessary step designed to control the immediate impacts of a problem, for example, to prevent ongoing errors or to ameliorate damage.</p>
Random variation	<p>The term used in statistical control to refer to those variations for which no cause can be found and there is no discernible trend, pattern or system.</p>
RCA	<p>Root cause analysis (RCA) is a formal problem-solving technique. In RCA there are many possible causes of any problem. Eliminating some will have no impact, while eliminating others will ameliorate the problem. However, elimination of the root cause will eliminate the problem completely. There should only be one root cause for any problem and so the analysis should continue until this one cause is found. Elimination of the root cause permanently eliminates the problem.</p>
RCM	<p>Reliability centered maintenance (RCM) moves maintenance from reactive, or even planned/programmed towards a focus on uptime and OEE.</p>
Resolution (in experiment design)	<ul style="list-style-type: none"> <li>• Resolution III design: A design where main factor effects are confounded with two factor and higher order interactions</li> <li>• Resolution IV design: A design where main effects are confounded with three factor and higher order interactions and all two factor interactions are confounded with two factor interactions and higher order interactions</li> <li>• Resolution V design: A design where main effects are confounded with four factor and higher order interactions and two factor interactions are confounded with three factor interactions and higher order interactions.</li> </ul>
Root cause	<p>There are many possible causes of any problem. The root cause contrasts with other possible causes of a problem which when eliminated have no impact or only ameliorate the problem. Elimination of the root cause permanently eliminates the problem. There should only be one root cause for any problem and so the analysis should continue until this one cause is found.</p>
Sampling scheme/ schedule	<ul style="list-style-type: none"> <li>• sampling for attributes or sampling for variables</li> <li>• batch, continuous or custom-made products</li> <li>• number of items/samples</li> <li>• size of sample</li> <li>• timing of sampling</li> <li>• location of sampling points</li> <li>• type of sample</li> <li>• number/type of measurements to be done on each sample</li> <li>• sampling equipment</li> </ul>



Term	Definition
	<ul style="list-style-type: none"> <li>• measurement/testing equipment/methods.</li> </ul>
SCADA	<p>SCADA refers to a number of systems which automatically collect critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information to personnel for action.</p> <p>In some industry sectors, the SCADA system is sometimes integrated into other sophisticated computer control systems, such as Distributed Control System (DCS). These sectors may simply refer to their SCADA as the DCS or other similar term (such as the proprietary name of the computer system). SCADA systems may provide information from outside of the process, such as stock/material levels in a customer plant and/or available supply, supply rates and pricing from a supplier plant. This information may all be accessed by the SCADA system and the employee using it in order to make production rate and other control decisions (either automatically or human assisted) about their own operations and work processes.</p>
Signal to noise	<p>May be estimated from:</p> <ul style="list-style-type: none"> <li>• previous experiment design experience</li> <li>• previous process capability studies</li> <li>• statistical process control data</li> <li>• estimated from other sources.</li> </ul>
Six-sigma	<p>Six sigma is a process improvement methodology based on statistical process control with six sigma limits which equates to 3.4 defects per million opportunities for each product or service transaction.</p> <p>Six sigma is also often used as a general term covering a competitive systems and practices approach. Six sigma training typically covers several units of competency in this Training Package.</p>
Skills and/or other development needs	<p>This encompasses the development of the range of skills, knowledge, attitudes, values and so on that may be needed by personnel, at any level, to participate effectively in CSP.</p> <p>The following should be considered in assessing needs:</p> <ul style="list-style-type: none"> <li>• Skills/knowledge in specific CSP systems, practices and tools etc</li> <li>• Behaviours that reflect the values of the chosen CSP approach and the organisation (e.g. supporting innovation, developing people, customer value, safety, respect for people, respect for process)</li> <li>• Ability to participate in a CSP culture (e.g. communicate about errors, respectfully discuss ideas, make suggestions, contribute to devolved decision making and problem-solving).</li> </ul>
SKU	<p>Stock Keeping Unit (SKUs) are products or services that have a unique identifier in an organisation's inventory system. They may relate to items that are either purchased, offered for sale, or manufactured/conducted internally and which needs to be tracked. A SKU will usually be a physical product but may include countable services/events (e.g. time slots available for service calls charged by the hour, and insurance claims).</p>
Sponsor	<p>Sponsor includes a person who is committed to achieving improvements and who has the authority to approve and allocate resources to support the activities and ensuing changes. Typically the sponsor will be a middle or senior manager in the organisation or the business owner.</p>
Stakeholder	<p>Stakeholder is a generic term but carries significant meaning and status. Where this term is used the unit requires consideration of a broad range of stakeholders to identify who has relevance to and/or investment in the processes, products or services covered by the unit. Stakeholders with various types and levels of relevance/investment should be included to give a broad representation of perspectives.</p>

Term	Definition
	<p>Depending on the unit of competency stakeholders may include:</p> <ul style="list-style-type: none"> <li>• A sample/representative of people undertaking each activity or step in a multi-person process</li> <li>• Equipment suppliers and contractors (especially if new equipment required)</li> <li>• External customers (end users, suppliers)</li> <li>• Government agencies</li> <li>• Internal customers</li> <li>• Line managers and decision makers at various levels (team leaders, supervisors, middle and senior managers)</li> <li>• local community representatives</li> <li>• Maintenance and other personnel</li> <li>• Organisation's governance body, senior management team</li> <li>• Value stream members</li> <li>• Personnel in other teams, sections or departments of the organisation</li> <li>• Regulatory authorities</li> <li>• Service providers, utilities (e.g. water and power)</li> <li>• Team members, operational 'experts'</li> <li>• Technical specialists</li> </ul>
Stakeholders - Key stakeholder	<p>'Key' stakeholder refers to the most critical or directly invested stakeholders. This requires identification of people/groups with direct involvement relevant to the specific content/issue within a unit. Typically this will include:</p> <ul style="list-style-type: none"> <li>• Authorised decision makers/line managers</li> <li>• Team members</li> <li>• Technical experts</li> <li>• Internal/external customers.</li> </ul>
Supplier	<p>Includes internal or external suppliers who should be sufficiently close to the individual's work as to be easily identifiable.</p> <p>The operator does not need to interface directly with external suppliers, but should be provided with sufficient information to enable them to identify supplier contribution to their own work and to customer benefit.</p>
Supply schedule ('rope')	<p>Supply schedule refers to ensuring the capacity constrained resource has what it needs when it needs it (often referred to as 'the rope' – the system which releases supply as needed).</p>
Supporting tools (generic/common tools)	<p>Structured problem solving Standard procedures</p>
Systems	<p>Systems are used to mean any/all of the equipment, processes, procedures and work practices that are used to produce the product.</p>
Takt time	<p>Takt time is the time required to complete one job cycle if the customer's time and volume expectations are to be met, i.e. the available time divided by the number of units required, and so may include, but is not limited to:</p> <ul style="list-style-type: none"> <li>• time per piece where applied to piece work</li> <li>• time per tonne or litre when applied to bulk product</li> <li>• time per work item when applied to an office or service environment</li> <li>• deadlines required to meet delivery dates when applied to project work</li> <li>• target cycle time for sporadic processes or processes not linked to a customer requirement (e.g. a regulatory requirement).</li> </ul>
Team	<p>All individuals in the target work area who are involved in the activity/process.</p> <p>The team may or may not be a formally designated team working to a team leader.</p>
Team leader	<p>Any person who may have either a permanent or an ad hoc role in facilitating the function of a team in a workplace.</p>

Term	Definition
Three sigma	Statistical process control with three sigma limits which equates to 3 defects per thousand opportunities for each product or service transaction. Traditional statistical process control.
Ticket	A ticket may include kanban or some other record, paper or electronic, which constitutes the whole or part of the flow authorising system (where kanban bins are used, there may be no other record).
TPM	Total productive maintenance (TPM) refers to an application of total quality management to maintenance with the intention of increasing reliability, getting it right first time and increasing OEE.
Unnecessary waste	Unnecessary waste includes any activity or cost which does not contribute directly to customer benefit/features in the product and can be avoided. Unnecessary waste should be eliminated as quickly as practical.
Uptime	Uptime refers to the overall availability of the plant (it is the inverse of downtime) or the unavailability of the plant. Ideal uptime is 100%.
Value added	Contribution to the customer benefits/features and may be in the form of: <ul style="list-style-type: none"> <li>• technical benefits/features</li> <li>• location benefits/features</li> <li>• aesthetic benefits/features</li> <li>• information benefits/features.</li> </ul>
Value stream	The value stream begins with the customer and includes all actions (both value-adding and non-value added) by both internal sections/ departments and external organisations to meet a customer requirement. Depending on the operations and the customer requirement stages where value stream actions may occur include: <ul style="list-style-type: none"> <li>• sales outlet/representative</li> <li>• information gathering, data analysis and research</li> <li>• product design</li> <li>• raw material sourcing</li> <li>• intermediate processing</li> <li>• final assembler/collation/preparation</li> <li>• support services (e.g. accounting, finance and legal)</li> <li>• storage and delivery to customer</li> <li>• after market support.</li> </ul>
Value stream map	Documents the actual flow of content information, materials and process information through the value stream and measures variables, such as: <ul style="list-style-type: none"> <li>• lead time</li> <li>• process time</li> <li>• quantity of work in progress</li> <li>• resources used in order to identify ways to improve the ratio of value-add to non-value add.</li> </ul> May be in hard copy or use software.
Variability in costs	Variability in costs should be assessed over a suitable time. The time should be sufficient to identify: <ul style="list-style-type: none"> <li>• fluctuations in variable costs related to different volumes of sales, production or operations</li> <li>• abnormal cost fluctuations due to poor design of product or process, poor scheduling, faults, breakdowns and other waste.</li> </ul>
Variation/variability	Variation refers to variation from quality standards and customer requirements as expressed in production or operations schedules and technical specifications. <ul style="list-style-type: none"> <li>• different times taken to do the same thing</li> <li>• different effort taken to do the same thing</li> <li>• different results from applying the same effort (i.e. variation in quality)</li> <li>• amount of rework required</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• cost</li> <li>• safety, health or environmental outcomes.</li> </ul>
Viability	<ul style="list-style-type: none"> <li>• appropriate calculated processing times</li> <li>• adequacy of equipment utilisation</li> <li>• acceptable maintenance implications</li> <li>• ability to meet WHS requirements</li> <li>• ability to meet environmental requirements</li> <li>• compliance with any legislative and regulatory requirements</li> <li>• acceptable to stakeholders.</li> </ul>
Visual devices	<p>A visual device is any device which provides information, direction, and so on, without the use of an aural communication channel. A visual device may be:</p> <ul style="list-style-type: none"> <li>• a static display</li> <li>• a manually updated display</li> <li>• an automatically updated display.</li> </ul>
Waste	See Muda.

## Sustainable Operations

Sustainable Operations – focuses on the integration of sustainability principles and practices into business operations and culture to enhance sustainable and competitive advantages and meet legislative requirements. This includes the skills to:

- establish and monitor an organisation’s own sustainability performance
- develop and implement sustainability improvement strategies and practices in their organisation and/or all or part of the value chain
- engage with stakeholders, including shareholders, employees, governments, other value chain members and the local and general community.

Term	Definition
Actual consumption	Actual consumption is the amount of a resource entering the value chain.
Circularity improvements	<p>For the purposes of this Training Package circularity refers to the application of decisions and activities designed to move the organisation towards a non-waste scenario that is in equilibrium and which supports regeneration of natural systems.</p> <p>Circularity improvements will typically align to one or more aspects of the currently accepted frameworks of 3 Circular Economy principles and 5 Circular Economy business models.</p>
Embodied carbon	Embodied carbon is the total of carbon consumed in the manufacture, use and disposal of the product expressed as CO <sub>2</sub> equivalent tonnes.
Emissions	Emissions refers to the difference between material entering a process and product leaving the process.
Energy intensity	Energy intensity includes required temperature, power and pressure, as relevant.
FMEA	Failure mode and effects analysis (FMEA) is a systematic approach that identifies potential failure modes in a system, product, or manufacturing/assembly operation caused by either design or manufacturing/assembly process deficiencies. It also identifies critical or significant

Term	Definition
	<p>design or process characteristics that require special controls to prevent or detect failure modes. FMEA is a tool used to prevent problems from occurring.</p> <p>Some industry sectors have highly adapted forms of FMEA and may practice traditional FMEA in their routine maintenance while using another technique, such as hazard and operability studies (HAZOP), for design and modification.</p>
Interactions with the environment	Interactions are value-free statements of how each step, or the entire process, interact with the ecology, society and the organisation's economy.
Kaizen	Kaizen is continuous improvement of an entire value stream or an individual process to create more value with less waste.
MTBF	Mean time between failures (MTBF) is one key measure of the effectiveness of a maintenance procedure, and is an indicator as to whether root causes are being found and resolved. If MTBF is reducing, then it is an indicator that the maintenance regime is failing.
Net use of water	Net use of water is water consumed minus water generated.
PDCA	<p>PDCA is:</p> <ul style="list-style-type: none"> <li>• Plan</li> <li>• Do</li> <li>• Check</li> <li>• Act.</li> </ul> <p>An appropriate alternative is PDMIC:</p> <ul style="list-style-type: none"> <li>• Plan</li> <li>• Do</li> <li>• Measure</li> <li>• Improve</li> <li>• Control.</li> </ul> <p>Other structured approaches may be used e.g. Plan, Do Study, Act (PDSA).</p>
Periodic reviews	<p>Periodic reviews may include:</p> <ul style="list-style-type: none"> <li>• reviews to targets (e.g. against set KPIs)</li> <li>• reviews to external environment which may include techniques, such as:</li> <li>• SWOT analysis</li> <li>• search conference</li> <li>• Delphi technique.</li> </ul>
Personnel costs	Personnel costs may include costs related to recruiting new staff, retrenchments, training and retraining and use of contract labour for sustainability related improvements.
Process	Process includes all parts of the value chain, including any operational, logistics, administrative, information technology or business process.
Process mapping	Process mapping is a technique for visualising/ drawing a set of interrelated work activities characterised by a set of inputs and value-added tasks that produce a set of outputs. It applies to any process producing a good or a service.
Product life cycle	Product life cycle includes the entire life cycle of a product through design, manufacture, service and disposal.
RCM	RCM refers to a strategy which moves maintenance from reactive, or even planned/programmed, towards a focus on uptime and OEE.

Term	Definition
Return on investment	ROI means return on investment and relates in this unit to assessing the returns (positive and negative) on the investment required to make sustainability improvements. The actual formula used and the definitions of factors and hurdle rates adopted should be consistent with standard practice for the organisation.
Social sustainability	For the purposes of this Training Package social sustainability refers to decisions and activities with potential, actual or perceived impact on the sustainability of people in terms of their survival, health, wellbeing, livelihood, human rights, heritage and equity. Impact may be direct or indirect.
Social sustainability goals	Social sustainability goals relate to the activities and programs being implemented and define what will be quantified and monitored in the metrics system. They may already be stated or may need to be defined in establishing the metrics system.
Social sustainability metrics	Social sustainability metrics refers to quantifying the social aspects of sustainability which are typically 'intangible' and hard to measure. This is done by using indicators and estimations.
Strategic opportunities	Strategic opportunities refers to areas of activity where implementing programs, innovations and/or improvements in social sustainability also provide opportunities to advance and/or improve the business in sustainable ways.
Sustainability context (approach?)	This refers to the drivers of sustainability change for an organisation and the areas of focus for its sustainability goals, strategies, systems etc.  For some organisations the focus will be on incremental change (improvements within existing operations, 'simple' changes to operations).  Other organisations will focus on radical change (significant changes to engineering, design, processes, business model e.g. for circular economy)
Sustainability focused accounting methods	Generic term which includes current and emerging accounting frameworks which extend, replace or complement traditional accounting frameworks. They may aim to account for non-financials, intangibles, climate related costs, materials footprint, carbon footprint etc.  Examples include: <ul style="list-style-type: none"> <li>• Impact adjusted accounting (e.g. Impact weighted accounting framework)</li> <li>• Sustainability Accounting Standards Board Standards</li> <li>• Economy Wide Material Flow Accounts</li> <li>• Climate-related Financial Disclosures</li> <li>• International Financial Reporting Standards Foundation work on global sustainability related reporting standards</li> </ul>
Sustainability impact	The potential or actual effect on an area of sustainability or a sustainability issue arising from an organisation's actions/activities (proposed or implemented). May be positive or negative.
Sustainability interactions	Interactions are value-free statements of how each step, or the entire process, interact with the 'sustainability' (ecology, society and the (organisation's) economy).
Sustainability issues	Areas where there is a defined sustainability need or risk, a recognised negative impact on sustainability outcomes or an opportunity for improved performance.  Sustainability issues could include, for example: <ul style="list-style-type: none"> <li>• current regulatory requirements</li> <li>• identified problems with local community</li> <li>• non-conformance</li> <li>• actual, or high risk of, environmental damage</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• levels of energy or other resource use</li> <li>• levels of waste, pollution, emissions</li> <li>• slavery/exploitation in the supply chain</li> <li>• actual, or high risk of, negative impact on an area or aspect of sustainability (people, planet, prosperity).</li> </ul>
Sustainability reports	<p>May be voluntary but 'required' by the organisation e.g. GRI reporting framework</p> <p>May be regulated - a compliance requirement under regulations/legislation e.g. NGRS.</p>
Sustainability sensitivities	<p>Areas of risk which may result in the need for improved performance due to controversy, non-conformance, poor community relationships, environmental damage, impact on local communities and so on.</p> <p>Sustainability sensitivities could include, for example:</p> <ul style="list-style-type: none"> <li>• fragile areas, rare or threatened species</li> <li>• areas of heritage or cultural significance</li> <li>• hazardous or regulated emissions</li> <li>• changing/emerging regulatory requirements</li> <li>• community perceptions or expectations</li> <li>• emerging trends and approaches to sustainability</li> <li>• other issues, such as those identified in ISO 14001 Environmental Standards.</li> </ul>
Sustainability-related voluntary standards, codes, certification and co-regulatory arrangements	<p>Generic term which includes codes, standards (etc) that are voluntary, for example:</p> <ul style="list-style-type: none"> <li>• Australian Packaging Covenant</li> <li>• Global Organic Textile Standard, Good Environmental Choice Australia, Green tick, Cradle to Cradle Products Innovation Institute, B Team</li> <li>• AS/NZ and ISO standards (voluntary)</li> <li>• AS/NZS ISO 14001 Environmental Management Systems or its authorised replacement (if not specified separately).</li> </ul>
Sustainability-related regulatory and reporting requirements	<p>Generic term which includes, for example:</p> <ul style="list-style-type: none"> <li>• areas that overtly relate to sustainability (e.g. greenhouse gas emissions, environmental impact)</li> <li>• areas with less obvious sustainability implications (e.g. ASIC governance requirements)</li> <li>• new legislation or emerging issues (e.g. Modern Slavery Act 2018, Recycling and Waste Reduction Act 2020)</li> <li>• AS/NZ Standards (mandatory) with connection to sustainability issues.</li> </ul>
Theoretical consumption	<p>Theoretical consumption of resources is the minimum amount of resources per product as defined by the customer multiplied by the rate of production.</p> <p>Theoretical consumptions includes consideration of the relevant physics, chemistry and biology of the process to determine theoretical yield as well as assuming zero defective product.</p>
Theoretical use of energy	<p>The amount of energy (work) required to move a mass or heat matter is a basic physics calculation. This is the theoretical use of energy. Anything used above this is waste (although in physics it may be referred to as inefficiency).</p>
Value chain	<p>Value chain components include all components from source through use to reuse/recycle (etc) and eventual end of life (if relevant).</p>