



Australian Government

Department of Education, Employment and Workplace Relations

MSACMT453A Use six sigma techniques

Revision Number: 1

MSACMT453A Use six sigma techniques

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the knowledge and skills required to apply six sigma techniques in the workplace. Six sigma is a statistical based technique for improving quality in manufacturing and other supporting processes.
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Application of the Unit

Application of the unit	This unit applies where a statistical based strategy such as six sigma will be used to establish current quality performance and then to investigate and improve all or part of a process. This will be done with other members of the process team. This unit requires the application of skills associated with using information, problem solving, initiative, enterprise, planning and organising in order to identify an area requiring improvement and develop a measured process to make improvements. This unit has prerequisites of <i>MSACMT452A Apply statistics to processes in manufacturing</i> Depending on the scale of six sigma implementation in the enterprise the following units may also be relevant: • <i>MSACMT450A Undertake process capability improvements</i> • <i>MSACMS401A Ensure process improvements are sustained</i> • <i>MSACMC410A Lead change in a manufacturing environment</i> • <i>MSAPMSUP390A Use structured problem solving tools</i>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	MSACMT452A	<i>Apply statistics to processes in manufacturing</i>
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Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify an area requiring improvement	1.1. Identify customer needs from process 1.2. Identify customer benefits delivered by process 1.3. Identify areas requiring improvement
2. Apply DMAIC process	2.1. Define improvement project 2.2. Acquire required measurements/data 2.3. Analyse data and determine possible process improvements 2.4. Develop and test improvement solutions 2.5. Control and standardise the improvement
3. Review and confirm improvement.	3.1. Determine and document benefits 3.2. Ensure procedures and other relevant documentation is updated for improved procedure 3.3. Review process data after an appropriate period and confirm the improvement

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills:

- analysis
- problem solving
- communication
- documenting
- calculations
- use of statistics

Required knowledge:

- Charting such as Pareto Charts, fish bone diagrams
- Statistical principles
- Acceptance criteria/confidence levels
- Define, Measure, Analyse, Improve and Control (DMAIC) methods
- Six sigma principles.

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide describes the underpinning knowledge and skills that must be demonstrated to prove competence. It is essential for assessment and must be read conjunction with the performance criteria, the range statement and the assessment guidelines of the relevant Training Package.

Overview of assessment requirements	Assessment should confirm the ability to apply simple six sigma techniques in a manufacturing environment.
What critical aspects of evidence is required to demonstrate competency in this unit?	Evidence of applying all of the DMAIC stages to a manufacturing improvement project simple six sigma undertaken should be available.
In what context should assessment occur?	Assessment will need to occur in an organisation implementing six sigma or by project. The project should be clearly defined. Work on the project can be undertaken as part of a team. However the individual skills and knowledge of the person undertaking the unit must be able to be separately assessed.
Are there any other units which could or should be assessed with this unit or which relate directly to this unit?	This unit could be assessed concurrently with other units dealing with six sigma type work and/or change management. Depending on the project and the nature of the manufacturing operation the following units may be able to be assessed with this unit: • <i>MSACMT450A Undertake process capability improvements</i> • <i>MSACMS401A Ensure process improvements are sustained</i> • <i>MSACMC410 Lead change in a manufacturing environment</i> • <i>MSAPM290A Use structured problem solving tools</i>
What method of assessment should apply?	Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the elements, performance criteria, skills and knowledge. A holistic approach should be taken to the assessment. Assessors should gather sufficient, fair, valid, reliable, authentic and current evidence from a range of sources. Sources of evidence may

EVIDENCE GUIDE	
	include direct observation, reports from supervisors, peers and colleagues, project work, samples, organisation records and questioning. Assessment should not require language, literacy or numeracy skills beyond those required for the unit. The assessee will have access to all techniques, procedures, information, resources and aids which would normally be available in the workplace. The method of assessment should be discussed and agreed with the assessee prior to the commencement of the assessment.
What evidence is required for demonstration of consistent performance?	Generally a number of small six sigma projects undertaken or active involvement in some larger six sigma projects would be required to generate sufficient evidence.
What are the specific resource requirements for this unit?	Access to an organisation using six sigma.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

DMAIC	DMAIC is a structured improvement process involving the following stages: • define • measure • analyse • improve • control and standardise
Define	Definition of the project to include: • 'as is' process map • defining benefits from the project • problem statement • goal statement • project scope
Measurements	Measurements may include: • identification of key measures/attributes • sampling schedule for project
Analyse	Analyse may include: • statistical analysis of data • root cause analysis • use of various problem solving/analysis tools
Improvement	Improvement may include: • generation and testing of improvements • selection of appropriate improvements
Control and standardise	Control and standardise may include: • documenting • transferring ownership of improved process

Unit Sector(s)

Unit Sector	CM Tools
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corequisite units

Corequisite units	
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Functional area

Functional Area	
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