Field Engineering and Technology

Review of *Mechanical Engineering* unit standards

Subfield	Domain	ID
Mechanical Engineering	Engineering - Materials	2383, 4797, 4799-4802, 20799, 20917
	Engineering - Measurement	4432, 4433, 4435-4441

Competenz has completed the review of the unit standards listed above.

Date new versions published **June 2011**

Planned review date **December 2016**

Summary

Competenz completed a review of the unit standards above in consultation with the assessors, moderators and providers of the standards. Consultation was through an online survey and email. Comments retained in the Competenz database were also integrated.

The review was to ensure the standards still meet industry requirements, and to ensure they were clear, logical and fit for purpose.

The review found that the majority of the standards from the Engineering - Materials and Engineering - Measurement domains were fit for purpose. However there were updates and improvements that were able to be made to clarify interpretation. This included simplification and contextualisation. Changes made to the standards reflect the way that the standards are used in industry.

Main changes

- The level of standard 20799 was increased from 2 to 3 to provide a best match between the level descriptors and the outcomes and evidence requirements of the standard.
- References were checked and updated where required.
- The explanatory notes for each unit standard were standardised for consistency.
- Outcomes and evidence requirements in many of the standards were amended or added to, to better reflect current practices and industry requirements.

The *Registration Criteria for National Qualifications Framework (NQF) Unit Standards* have been reviewed and replaced with the *Quality assurance criteria for the listing of unit standards on the Directory of Assessment Standards*. The changes made to the criteria during this review reflect the replacement of the NQF and the Register with the New Zealand Qualifications Framework (NZQF) and the Directory of Assessment Standards, the inclusion of criteria for grades, and changes to terminology and format of unit standards. The main changes to terminology are that:
Special Notes were renamed *Explanatory notes*
Elements were renamed *Outcomes*
Performance Criteria were renamed *Evidence requirements.*

The standards covered by this report have been published in the new format.

Impact on existing accreditations

Current Accreditation for			Accreditation extended to		
Nature of accreditation	**Classification**	**Level**	**Nature of accreditation**	**ID**	**Level**
Subfield	Mechanical Engineering	2	Standard	20799	3
Domain	Engineering - Materials				

Impact on registered qualifications

Key to type of impact	
Affected	The qualification lists a reviewed classification (domain or subfield) in an elective set The qualification lists a standard that has changes to level or credits The qualification lists a C or D category standard
Not materially affected	The qualification lists a standard that has a new title The qualification lists a standard that has a new classification

The following Competenz qualifications are impacted by the outcome of this Review and will be updated when they are revised or reviewed in the period 2011 to 2014. The classifications and/or standards that generated the status *Affected* are listed in **bold**.

Ref	Qualification Title	ID
0122	National Certificate in Engineering - Fabrication (Level 4) with strands in Heavy Fabrication, Light Fabrication, and Steel Construction	**20799**
0124	National Certificate in Heating, Ventilating, and Air Conditioning (Mechanical Services) (Level 4)	
0129	National Certificate in Metal Casting (Technology)	
0130	National Certificate in Refrigeration and Air Conditioning (Level 4)	
1220	National Certificate in Mechanical Engineering (Level 2)	
1262	National Certificate in Mechanical Engineering (Level 4) with strands in Fitting and Machining, General Engineering, Machining, Maintenance Engineering, Toolmaking, and Electricity Supply	
1387	National Certificate in Manufacturing (Metal and Related Products) (Level 3)	
1388	National Certificate in Manufacturing (Metal and Related Products) (Level 4)	
1615	National Certificate in Welding (Level 3)	

The following table identifies qualifications developed by other SSBs that are impacted by the outcome of this review. The SSBs have been advised that the qualifications require revision. The classifications and/or standards that generated the status *Affected* are listed in **bold**.

Ref	Qualification Title	ID	SSB Name
0742	National Certificate in Aeronautical Engineering (Aircraft Manufacture)	**20799**	Aviation, Tourism and Travel Training Organisation
1294	National Certificate in Electricity Supply (Electrical) (Level 3) with strands in Electricity Supply Electrician, Electrical Fitter, and Electrical Technician	**20799**	Electricity Supply Industry Training Organisation
1414	National Certificate in Motor Industry (Automotive Body) (Level 4) with strands in Coachbuilding, Collision Repair, and Refinishing	**20799**	NZ Motor Industry Training Organisation (Incorporated)
0394	National Certificate in Plastics Processing Technology (Technical) (Level 2) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding	**20799**	Plastics and Materials Processing Industry Training Organisation Incorporated
1235	National Certificate in Engineering and Technology (Pharmaceutical and Allied Products) (Level 2)		
1378	National Certificate in Engineering and Technology (Glass Container Mould Maintenance) (Level 2)		
1407	National Certificate in Engineering and Technology (Plastics Engineering) (Level 4) with strands in Injection Moulding, Extrusion, Blow Moulding, Pressure Thermoforming, Vacuum Thermoforming, Blown Film Extrusion, Film Conversion, Injection Stretch-Blow Moulding, and Rotational Moulding		

Detailed list of unit standards – classification, title, level, and credits

All changes are in **bold**.

Key to review category	
A	Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number
B	Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number
C	Major changes that necessitate the registration of a replacement standard with a new ID
D	Standard will expire and not be replaced

Engineering and Technology > Mechanical Engineering > Engineering - Materials

ID	Title	Level	Credit	Review Category
2383	Carry out heat treatment of metal parts under supervision	2	2	B
4797	Demonstrate knowledge of the composition of engineering metals	3	5	B
4799	Test the physical properties of engineering metals	4	4	B

ID	Title	Level	Credit	Review Category
4800	Demonstrate knowledge of heat treatment for engineering steels	4	5	B
4801	Demonstrate knowledge of heat treatment for engineering non-ferrous metals	4	4	B
4802	Complete heat treatment of engineering metals in a furnace	4	10	B
20799	Demonstrate basic knowledge of engineering metals	2 **3**	4	B
20917	Demonstrate basic knowledge of engineering materials	2	2	B

Engineering and Technology > Mechanical Engineering > Engineering - Measurement

ID	Title	Level	Credit	Review Category
4432	Demonstrate knowledge of, and convert, units of measure used in engineering	2	2	B
4433	Select, use, and care for simple measuring devices used in engineering	1	2	B
4435	Select, use, and care for engineering dimensional measuring equipment	2	3	B
4436	Select, use, and care for engineering marking-out equipment	2	4	B
4437	Select, use, and care for advanced engineering measuring equipment	3	3	B
4438	Demonstrate knowledge of fits, limits, and tolerances in engineering	2	2	B
4439	Select, use, and care for complex engineering measuring equipment for precision jobs	4	4	B
4440	Demonstrate and apply knowledge of international tolerancing in engineering	4	4	B
4441	Calibrate engineering measuring devices and equipment	4	4	B