Field Engineering and Technology

Review of *Mechanical Engineering* unit standards

Subfield	Domain	ID
Mechanical Engineering	Engineering – Materials	20800, 20801
	Engineering – Measurement	4442, 4443
	Engineering Core Skills	21771
	Engineering Drawing and Design	2441
	Fluid Power – Hydraulics	20607-20610
	Fluid Power – Pneumatics	20604
	Maintenance and Diagnostics in Mechanical Engineering	2412, 2413, 11399-11401, 12293, 12294, 21780, 21786
	Mechanical Commissioning	22915

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

Date new versions published **November 2011**

Planned review date **December 2016**

Summary

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

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

The review found that the majority of the standards from the above mentioned 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. The changes made to the standards better reflect the way that the standards are used in industry.

Main changes

- 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.
- Unit Standard 21771 will be expired because of overlap with standard 21780.

Category C unit standards will expire at the end of December 2012

Category D unit standard will expire at the end of December 2014

Impact on existing organisations with consent to assess

Current consent for			Consent extended to		
Nature of consent	**Classification or ID**	**Level**	**Nature of consent**	**Classification or ID**	**Level**
Standard	20800	5	Standard	27446	5
Standard	20801	5	Standard	27447	5

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 affected by the outcome of this review and will be updated when they are reviewed in 2016 and 2012.

Ref	Qualification Title	Classification or ID
1545	National Certificate in Mechanical Engineering (level 5) with strands in Engineering Fabrication, Fire Protection, General and Maintenance Engineering, Mechanical Services, and Precision Engineering	20800
0534	National Diploma in Engineering (Level 6) with strands in Mechanical Engineering, Production Engineering, and Mechanical Services, and with an optional strand in Practical Endorsement	21771

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
20800 **27446**	Demonstrate knowledge of engineering tool steels **Demonstrate knowledge of engineering tool steels and surface treatment of steels**	5 **5**	5 **7**	C
20801 **27447**	Demonstrate knowledge of, and undertake, surface treatment of steels **Conduct surface treatment of steels**	5 **5**	10 **8**	C

Engineering and Technology > Mechanical Engineering> Engineering – Measurement

ID	Title	Level	Credit	Review Category
4442	Demonstrate knowledge of, and use, coordinate measuring machine (CMM) technology	5	6	B
4443	Demonstrate knowledge of, and apply, international measurement uncertainty principles in engineering	5	2	B

Engineering and Technology > Mechanical Engineering> Engineering Core Skills

ID	Title	Level	Credit	Review Category
21771	Manage a mechanical engineering project	6	20	D

Engineering and Technology > Mechanical Engineering > Engineering Drawing and Design

ID	Title	Level	Credit	Review Category
2441	Create complex three-dimensional engineering models	5	12	B

Engineering and Technology > Mechanical Engineering > Maintenance and Diagnostics in Mechanical Engineering

ID	Title	Level	Credit	Review Category
2412	Diagnose faults, overhaul, and test components in the mechanical engineering industry	5	8	B
2413	Test machines and equipment for vibration in the mechanical engineering industry	5	12	B
11399	Develop, implement, and review maintenance plans for mechanical engineering systems	6	20	B
11400	Manage testing and measuring procedures within mechanical engineering contexts	6	5	B
11401	Carry out tests and measurements using approved procedures within mechanical engineering contexts	5	10	B
12293	Establish vibration data from machinery using vibration measuring equipment	5	13	B
12294	Maintain machinery database and identify incipient failure of machinery from vibration analysis data	5	12	B
21780	Develop and implement a design plan for a mechanical engineering project	6	20	B
21786	Select and specify materials for mechanical engineering applications	6	20	B

Engineering and Technology > Mechanical Engineering > Mechanical Commissioning

ID	Title	Level	Credit	Review Category
22915	Commission mechanical engineering machinery or plant	5	15	B

Engineering and Technology > Mechanical Engineering> Fluid Power – Hydraulics

ID	Title	Level	Credit	Review Category
20607	Design a closed circuit hydrostatic transmission power system	5	10	B
20608	Design an open circuit, proportional hydraulic power system with closed loop control	5	10	B
20609	Design an open circuit, proportional hydraulic power system with open loop control	5	10	B
20610	Diagnose faults in specialist hydraulic power equipment	5	10	B

Engineering and Technology > Mechanical Engineering > Fluid Power – Pneumatics

ID	Title	Level	Credit	Review Category
20604	Design a complex pneumatic power control system	5	10	B