

FIELD ENGINEERING AND TECHNOLOGY**Review of *Mechanical Engineering* unit standards**

Subfield	Domain	Id
Mechanical Engineering	Engineering Patternmaking	2364-2370
	Metal Casting	2371, 2373-2382, 2384-2386, 15130-15132, 19449, 19741, 19742, 21471

Competenz has completed the review of the unit standards listed above that were registered in July and October 1999, August and December 2002, and February and March 2005.

Date new versions published

May 2006

Planned review date

December 2011

Summary of review and consultation process

A scheduled review of unit standards in the domains Metal Casting and Engineering Patternmaking was carried out between May and November 2005. Two questionnaires (Metal Casting and Engineering Patternmaking) were sent to all stakeholders. The feedback received from the questionnaires and other feedback recorded in the Competenz database since the unit standards were registered were taken into consideration in the review process. Two working group meetings were held in Auckland and in Christchurch to review the unit standards. Following each meeting, a summary of the agreed outcomes was circulated to all participants for further comment and verification. The decisions made during on the unit standard review were endorsed by the Sector Advisory Group of Metal Casting for the two domains - Metal Casting and Engineering Patternmaking and by the Sector Advisory Group of Composites for the domain - Engineering Patternmaking.

Main changes resulting from the review

- Levels and credits amended to better reflect the level of skill required and time taken to learn and demonstrate competence by the candidate in unit standards 2369, 2371, 2375, 2376, 2381, 2386, 15130, 15132, 19449 and 19742.
- Special notes edited and modified where required, ensuring consistency of wording, to better convey assessment parameters, and to update references to legislation.
- Entry information revised to reflect the current unit standards.
- Range statements updated.
- Performance criteria in some unit standards reworded to clarify performance requirements.

Impact on existing provider accreditations

Current Accreditation for			Accreditation extended to		
Nature of accreditation	Classification or Id	Level	Nature of accreditation	Classification or Id	Level
Subfield	Mechanical Engineering	2	Standards	2381, 2386	3
Subfield	Mechanical Engineering	3	Standards	15132, 19449	4
Domain	Metal Casting	2	Standards	2381, 2386	3
Domain	Metal Casting	3	Standards	15132, 19449	4

Impact on Accreditation and Moderation Action Plan (AMAP)

None.

Impact on existing qualifications

Qualifications that contain the reviewed standards or classifications are tabled below.

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 table contains unit standards in both categories, with the items that generated the *Affected* status in **bold**.

The following Competenz qualifications are affected by the outcome of this review and are currently being reviewed.

Qualification title	Standard in the qualification
National Certificate in Engineering Machining and Toolmaking (Level 4) [Ref: 0123]	2371
National Certificate in Gunsmithing (Level 4) [Ref: 0346]	2367, 2375, 2386
National Certificate in Metal Casting (Technology) (Level 4) [Ref: 0129]	2365-2368, 2369, 2371, 2375, 2376, 2381, 2386, 15132

Summary of main changes to standards' Ids, classification, titles, levels, and credits

The following summary shows the changes made to the standards as a result of the review. 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

Subfield Mechanical Engineering
 Domain Engineering Patternmaking

Id	Title	Level	Credit	Review Category
2364	Make wooden patterns and/or tooling under supervision for use in industry	3	25	B
2365	Make metal pattern and/or tooling under supervision for use in industry Make metal patterns and/or tooling under supervision for use in industry	3	25	B
2366	Make composites pattern and/or tooling under supervision for use in industry Make composites patterns and/or tooling under supervision for use in industry	3	25	B
2367	Make wooden pattern and/or tooling for use in industry Make wooden patterns and/or tooling for use in industry	4	20	B
2368	Make metal pattern and/or tooling for use in industry Make metal patterns and/or tooling for use in industry	4	20	B
2369	Make composites pattern and/or tooling for use in industry Make composites patterns and/or tooling for use in industry	4	10 20	B
2370	Design pattern and/or tooling for industry	5	15	B

Domain Metal Casting

Id	Title	Level	Credit	Review Category
2371	Produce metal castings using gravity die casting machine	2	3 5	B
2373	Work safely with molten metals	2	3	B
2374	Prepare and mix sand for metal casting processes	3	20	B
2375	Produce moulds and cores by hand for metal casting processes	4	20 25	B
2376	Produce moulds and cores using machines for metal casting processes	2	5 10	B
2377	Produce molten metal using metal melting furnace	3	20	B
2378	Pour molten metal into moulds	2	5	B
2379	Finish metal castings	2	15	B
2380	Inspect and test metal castings	3	15	B
2381	Inspect and repair refractory linings used in metal casting processes Inspect and repair refractory linings and crucibles used in metal casting processes	2 3	8 15	B

Id	Title	Level	Credit	Review Category
2382	Produce expendable wax patterns for lost wax casting method	2	5	B
2384	Develop a metal casting process to meet client's needs	5	30	B
2385	Repair porosity in metal castings using the impregnation method	2	3	B
2386	Produce ceramic shell moulds for use in the investment casting process in metal casting	2 3	8 15	B
15130	Provide solutions for casting defects	5	10 15	B
15131	Determine the inclusion content of steel	5	10	B
15132	Prepare metallographic sample	3 4	5 10	B
19449	Prepare for and perform chemical analysis using optical emission spectrometry equipment	3 4	5	B
19741	Demonstrate knowledge of common die casting defects	2	5	B
19742	Operate a pressure die casting machine under supervision	2	8 10	B
21471	Produce metal castings using pressure die casting machine	3	12	B