

FIELD COMPUTING AND INFORMATION TECHNOLOGY**Review of *Computing* qualifications and unit standards****Qualifications**

Qualification Titles	Reference
1 National Diploma in Computing (Level 6) with optional strands in Management, Operations, Support, Generic Computing, and Software Development	0303
2 National Diploma in Computing (Level 7) with optional strands in Management, Operations, Support, Generic Computing, and Software Development	0305

Unit Standards

Subfield	Domain	Id
Computing	Computer Management	6706-6723, 6726
	Computer Operations	6725, 6727, 6728, 6729-6742
	Computer Support	6837-6851, 6853, 6856-6868, 6875-6884, 6885-6888, 18744, 18751-18753, 18755
	Generic Computing	6749, 6751-6760
	Software Development - Design	6797-6821, 7911
	Software Development - Multimedia	6784-6796
	Software Development - Programming	6762, 6764-6783, 18757
	Software Development - System Assurance and Documentation	6822-6835

NZQA National Qualifications Services has completed the review of the qualifications and unit standards listed above.

Date report published

October 2008

This review report only covers standards that have been designated category D – ie they will expire and not be replaced. Another report will be published in the future covering the review and reclassification of the retained standards.

Summary of review and consultation process

In 2002, National Qualifications Services (NQS) undertook a prioritisation and rationalisation exercise to ensure that all standards and qualifications on the National Qualifications Framework (NQF) under the NQS standard setting scope were relevant and met the needs of learners, providers, the community, and the government. Careful consideration was given to the process to ensure that the unit standards retained by NQS reflected its responsibilities in relation to the Industry Training Act 1992, and national priorities including those expressed in the Tertiary Education Strategy of 2002/2007.

At this point a decision was made to exit from standard setting responsibility for standards at level 4 and above from all domains apart from Generic Computing.

From 2003 through to 2006, NZQA unsuccessfully explored options for other Standard Setting Bodies to take responsibility for these standards through transfer to an Industry Training Organisation (ITO).

In January 2006, providers were asked to submit current enrolment figures for qualifications that would be impacted by the exit and to provide feedback on the proposed transition period. After feedback the following decisions were made.

- A transition period of three years was established as being reasonable for providers to update their courses and for candidates to complete their qualifications.
- NQS reconsidered the decision to exit from level four and above as some level 4 standards had high usage in both the secondary and tertiary sectors.

In March 2007, a variation to the exit strategy was approved that allowed NQS to review all standards up to Level 7 in the Generic Computing domain and up to Level 5 in all other domains.

From July through September 2007 NQS undertook a scoping exercise and completed a report that compiled:

- known issues with the standards being considered for review
- feedback from stakeholders
- previous review reports
- usage figures
- sector views.

The report identified standards for designation as category D on the basis of low or declining use and/or feedback from stakeholders and moderators. The report also made recommendations regarding the reclassification of standards.

During December 2007, an expert panel comprising members from Universities, Institutes of Technology and Polytechnics, Private Training Establishments, Secondary Schools, Post Primary Teachers Association, National Advisory Committee on Computing Qualifications (NACCQ), along with National Moderators met to review the retained standards. They made further recommendations on standards that should be categorised D as they were no longer fit for purpose. Minutes from this meeting were then distributed to a wider consultation group for comment, and feedback received was considered.

In May 2008, a circular was sent to all accredited providers advising the exit was proceeding and outlining the proposed transition period. This was followed up by consultation with affected Industry Training Organisations, with a three year transition being endorsed.

Review of *Computing* qualifications

Main changes resulting from the review

These qualifications have been designated as expiring and will expire at the end of December 2011.

National Diploma in Computing (Level 6) with optional strands in Management, Operations, Support, Generic Computing, and Software Development [Ref: 0303]

Review category	D	See Key to Qualification Review Categories at the end of report
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National Diploma in Computing (Level 7) with optional strands in Management, Operations, Support, and Software Development [Ref: 0305]

Review category	D	See Key to Qualification Review Categories at the end of report
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Transition

None. The last date for assessment of standards leading to the qualifications is **December 2011**. It is assumed that this will allow sufficient time for current candidates to complete programmes and for providers to develop new courses.

Key to Qualification Review Categories

Category A The qualification is published as a new version with the same NQF ID	Changes are made to SSB name, contact details or purpose statement
	No change is made to title, rules or components of the qualification
	No transition arrangements are required
Category B The qualification is published as a new version with the same NQF ID	Changes are made to title, rules or components
	The new version of the qualification recognises a similar skill set to that recognised by the previous version
	The SSB is confident that people awarded the new or previous version are comparable in terms of competence
	Transition arrangements are required if candidates must gain additional/different credits for the new version
Category C A new (replacement) qualification is published with new NQF ID	Significant changes are made to the qualification in terms of components, structure, type or level
	The SSB views people with the replacement qualification as being significantly different in terms of competence from those with the replaced qualification
	Transition arrangements are required
	Transition may be limited to phase-out dates
Category D Qualification will expire. There is no replacement qualification	Qualification is no longer required by industry
	The qualification is designated as expiring and a last date for meeting the qualification requirements is set

Review of *Computing* unit standards

Main changes resulting from the review

- All standards at Level 6 and 7 in the Computing subfield have been designated expiring.

The unit standards, which have all been designated as category D, will expire at the end of December 2011.

Impact on classifications

The following domains have been designated Lapsing and will expire when all the standards classified within them expire. Any standards retained will be reclassified to domain Generic Computing.

- Computer Management
- Computer Operations (Contains one L5 standard that is not in this review: 6724)
- Software Development – Design (Contains one L3 unit standard that is not included in this review: 18749)
- Software Development – Multimedia
- Software Development – System Assurance and Documentation (Contains one L3 standard, 5955, which is not included in this review.)

Domains not listed for designation as Lapsing

- Computer Support
- Generic Computing
- Software Development – Programming

Impact on existing provider accreditations

None.

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 NZQA National Qualifications Services qualifications are affected by the outcome of this review and will be revised/reviewed in 2008.

Qualification title	Classification or standard in the qualification
National Diploma in Computing (Level 5) with optional strands in Management, Operations, Support, Generic Computing, and Software Development [Ref: 0302]	Computing, Computer Management, Computer Operations
National Certificate in Marketing [Ref:0345]	6752
National Diploma in Marketing with strands in General Marketing, Direct Marketing, International Marketing, Marketing Research, Sales Organisation and Management, Advertising, and Public Relations [Ref:0424]	6752

The following qualifications are also affected by the outcome of this review. The standard setting bodies (SSBs) have been advised that they require revision.

Qualification title	Classification or standard in the qualification	SSB Name
National Certificate in Textiles Manufacture (Technology) (Level 4) [Ref: 0638]	6749	Apparel and Textile Industry Training Organisation
National Certificate in Wool Scouring (Early Stage Wool Processing) (Level 4) [Ref: 0639]		
National Certificate in Electricity Supply (Technician) (Level 4) with strands in Control and Instrumentation, Power Technician, and HVDC Technician; and an optional strand in Electrical Services [Ref:0917]	6853	Electricity Supply Industry Training Organisation
National Certificate in Electronic Engineering (Level 4) [Ref:1123]	6875	ElectroTechnology Industry Training Organisation
National Certificate in Telecommunications (Research and Design) with strands in Electronics, Radio, Mechanical, and Software [Ref:0255]	6797, 6798	
National Diploma in Fire and Rescue Services (Vegetation Fire Fighting - Management) (Level 5) [Ref: 0780]	Computer Management, Computer Operations	Fire & Rescue Services Industry Training Organisation
National Certificate in Gas Industry (Gas Engineering) with strands in Gas Network Operations, Gas Network Planning and Development, and Gas Utilisation [Ref:0635]	6756	NZ Extractive Industries Training Organisation
National Diploma in Fitness (Applied) (Level 5) [Ref 1240]	Computer Operations	Sport, Fitness and Recreation Industry Training Organisation Limited

Review Categories and changes to 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

Subfield Computing
Domain Computer Operations

Id	Title	Level	Credit	Review Category
6725	Demonstrate an understanding of computer database design	6	7	D
6727	Apply the principles of multi-user computer database design and administration	7	7	D
6728	Manage supplies of consumables for a multi-user computer system	4	5	D
6729	Operate a multi-user computer system	5	10	D
6730	Administer a multi-user computer database system	6	20	D
6731	Control changes to a multi-user computer system	6	10	D

Id	Title	Level	Credit	Review Category
6732	Administer security systems for a multi-user computer system	6	15	D
6733	Administer a multi-platform computer network	6	15	D
6734	Create procedures for a multi-user computer system	7	15	D
6735	Administer a data model for a multi-user computer database	7	15	D
6736	Design and implement data structures using a multi-user computer database	7	15	D
6737	Plan capacity for a multi-user computer system	7	15	D
6738	Design and implement security systems for a multi-user computer system	7	15	D
6739	Demonstrate an understanding of computer network communication	6	9	D
6740	Apply the principles of administering a local area computer network	7	14	D
6741	Administer a local area computer network	6	15	D
6742	Administer a wide area computer network	6	15	D

Domain Computer Support

Id	Title	Level	Credit	Review Category
6837	Demonstrate an understanding of digital circuits	6	7	D
6838	Explain computer architecture concepts	6	7	D
6839	Explain the concepts of multi-user computer operating systems	6	7	D
6840	Apply the principles of installing and supporting a multi-user computer operating system	7	10	D
6841	Assemble a multi-user computer and peripherals from modules	6	10	D
6842	Install a multi-user computer and peripherals	6	10	D
6843	Install and maintain multi-user computer system software	6	10	D
6844	Install multi-user computer application software	6	10	D
6845	Repair a multi-user computer to module level	6	15	D
6846	Repair multi-user computer peripherals to module level	6	15	D
6847	Plan and coordinate the installation of a multi-user computer and peripherals	7	10	D
6848	Design information technology equipment environments	7	15	D
6849	Assess and provide technical advice on hardware for a multi-user computer and peripherals	7	20	D
6850	Assess and provide technical advice on system software for a multi-user computer	7	20	D
6851	Assess and provide technical advice on application software for a multi-user computer	7	10	D
6853	Describe computer cabling	4	4	D

Id	Title	Level	Credit	Review Category
6856	Describe and establish synchronous and asynchronous communication with computers	6	7	D
6857	Demonstrate an understanding of local and wide area computer networks	7	10	D
6858	Apply the principles of installing a local area computer network	7	9	D
6859	Apply the principles of designing a multi-platform computer system	7	10	D
6860	Install a local area computer network	6	10	D
6861	Install a wide area computer network	6	10	D
6862	Install networked computer application software	6	5	D
6863	Design a local area computer network	7	20	D
6864	Design a wide area computer network	7	20	D
6865	Plan and coordinate the installation of a computer network	7	10	D
6866	Assess and provide technical advice on a local area computer network	7	25	D
6867	Assess and provide technical advice on a wide area computer network	7	25	D
6868	Assess and provide technical advice on networked computer application software	7	15	D
6875	Repair data communications equipment to module level	5	10	D
6876	Assess and provide technical advice on hardware for a single-user personal computer and peripherals	6	15	D
6877	Assess and provide technical advice on software for a single-user personal computer	6	15	D
6878	Install computer cabling for a multi-user computer system	6	10	D
6879	Apply the principles of training for computer applications	6	7	D
6880	Apply the principles of creating computer based training applications	6	7	D
6881	Assist a person to learn to use a computer application	5	15	D
6882	Resolve computer users' problems	5	5	D
6883	Identify computer problem trends	5	5	D
6884	Design a teacher-based computer application training course	6	15	D
6885	Author a computer-based computer application training package	6	15	D
6886	Deliver a teacher-based training course for a computer application	6	15	D
6887	Resolve technical computer problems	6	5	D
6888	Analyse computer application training needs	7	15	D
18744	Evaluate comparable multi-user computer applications for organisation use	3	3	D

Id	Title	Level	Credit	Review Category
18751	Produce a computer manual or technical document for organisation use	3	5	D
18752	Describe and recommend internal components suitable for a single user personal computer	2	2	D
18753	Recommend hardware for a single user personal computer and peripherals for organisation use	3	5	D
18755	Identify and resolve users' minor computer problems	3	5	D

Domain Computer Management

Id	Title	Level	Credit	Review Category
6706	Demonstrate an understanding of the acquisition of computer systems	6	8	D
6707	Apply the principles of acquiring a computer system	7	10	D
6708	Produce an information technology plan	7	30	D
6709	Acquire a computer system	7	30	D
6710	Create a computerised information system disaster recovery plan	7	30	D
6711	Produce an information system strategy plan	8	30	D
6712	Redesign business processes incorporating information technology	8	30	D
6713	Explain the management of the information systems function in an organisation	6	7	D
6714	Create policies, procedures, and standards for computer operations	7	30	D
6715	Create policies, procedures, and standards for computer system development	7	30	D
6716	Create policies, procedures, and standards for computer support	7	30	D
6717	Create policies, procedures, and standards for computer communications	7	30	D
6718	Evaluate the effectiveness of a computer information system	7	20	D
6719	Apply the principles of computer auditing	7	7	D
6720	Produce findings from auditing a computer information system	6	20	D
6721	Produce a work plan for auditing computer management and operations	7	20	D
6722	Produce a work plan for auditing a computer system	7	20	D
6723	Produce an audit report from audit work papers for a computer information system	7	10	D
6726	Demonstrate an understanding of change management for computer systems	6	3	D

Domain Generic Computing

Id	Title	Level	Credit	Review Category
6749	Demonstrate an understanding of computerised process control systems	5	7	D
6751	Demonstrate an understanding of common computerised business accounting systems	6	7	D
6752	Demonstrate an understanding of emerging computerised business information systems	6	7	D
6753	Apply the principles of implementing and supporting a computerised accounting system	6	7	D
6754	Demonstrate an understanding of controls for business accounting computer applications	6	7	D
6755	Demonstrate an understanding of computer expert systems	6	7	D
6756	Apply the principles of project planning and control	6	7	D
6757	Apply the principles of producing a business proposal for a computer system	6	7	D
6758	Apply the principles of designing safeguards for computer information systems	6	7	D
6759	Demonstrate an understanding of the implementation of a new computer system	6	7	D
6760	Plan and manage a project in the computer field	7	30	D

Domain Software Development - Design

Id	Title	Level	Credit	Review Category
6797	Plan and coordinate the development of a computer application	7	15	D
6798	Plan and coordinate the implementation of a custom computer application	7	15	D
6799	Plan and coordinate the development of a computer application that is a high risk project	8	10	D
6800	Apply the principles of data analysis for computer systems	6	6	D
6801	Apply the principles of systems analysis using a structured methodology	6	7	D
6802	Apply the principles of Information Engineering	7	7	D
6803	Analyse an information system using structured systems analysis techniques	7	15	D
6804	Analyse an information system using Information Engineering techniques	7	20	D
6805	Analyse an information system using object-oriented analysis techniques	7	15	D
6806	Apply the principles of designing computer inputs and outputs	6	7	D
6807	Apply the principles of prototyping a computer application	6	7	D
6808	Demonstrate computer application design skills	6	7	D
6809	Apply the principles of designing decision support computer information systems	7	5	D

Id	Title	Level	Credit	Review Category
6810	Apply the principles of designing and implementing a computer application	7	7	D
6811	Design a computer application using Joint Application Development techniques	7	20	D
6812	Design a graphical user interface for a computer application	7	20	D
6813	Design a computer application for a local area network environment	7	15	D
6814	Design a computer application for a multi-platform environment	7	20	D
6815	Design a computer application for programming with an OOP language in a GUI environment	7	15	D
6816	Design a computer application for programming with a third generation language in a GUI environment	7	20	D
6817	Design a computer application for a multi-user computer for programming with a 4GL	7	15	D
6818	Design a computer application for a single-user personal computer for programming with a 4GL	7	15	D
6819	Design a multi-user text-based computer application for programming with a third generation language	7	15	D
6820	Design a single-user text-based computer application for a 3GL on a personal computer	7	15	D
6821	Design a computer program for system software	7	20	D
7911	Apply information gathering techniques for computer system development	6	7	D

Domain Software Development - Multimedia

Id	Title	Level	Credit	Review Category
6784	Create digitised text for a multimedia computer application	6	10	D
6785	Design a story for a multimedia computer application	7	20	D
6786	Plan and coordinate the development of a multimedia computer application	7	15	D
6787	Design a multimedia computer application	7	20	D
6788	Create animation for a multimedia computer application	7	20	D
6789	Create graphic elements for a multimedia computer application	7	20	D
6790	Create digitised video for a multimedia computer application	7	10	D
6791	Create digitised sound for a multimedia computer application	7	10	D
6792	Create digitised still images for a multimedia computer application	7	10	D

Id	Title	Level	Credit	Review Category
6793	Create object scripts for a multimedia computer application	7	20	D
6794	Author a multimedia computer application	7	20	D
6795	Create programs for a computer application integrating multimedia with a database	7	20	D
6796	Test a multimedia computer application	7	10	D

Domain Software Development - Programming

Id	Title	Level	Credit	Review Category
6762	Manage software development source files	5	5	D
6764	Apply the principles of creating batch and interactive computer programs using a 3GL	6	14	D
6765	Apply the principles of creating computer programs containing advanced algorithms using a 3GL	6	14	D
6766	Apply the principles of creating a text-based computer application using a third generation language	7	14	D
6767	Create a single-user text-based computer application for a personal computer using a 3GL	7	20	D
6768	Create a multi-user text-based computer application for a multi-user computer using a 3GL	7	20	D
6769	Demonstrate fourth generation language computer programming skills	6	7	D
6770	Apply the principles of creating a computer application using a fourth generation language	7	7	D
6771	Create database access for a computer application using structured query language	6	10	D
6772	Create an application for a single-user personal computer using a fourth generation language	7	20	D
6773	Create an application for a multi-user computer using a fourth generation language	7	20	D
6774	Apply the principles of creating a computer program using a 3GL in a GUI environment	6	14	D
6775	Create a computer application using a third generation language in a GUI environment	7	20	D
6776	Demonstrate computer programming skills using an object-oriented language	6	14	D
6777	Apply the principles of creating a computer program using an OOP language in a GUI environment	7	14	D
6778	Create a computer application using an object-oriented programming language in a GUI environment	7	30	D
6779	Demonstrate computer microprocessor programming skills	5	7	D
6780	Demonstrate assembler programming skills for computer systems programming	6	7	D

Id	Title	Level	Credit	Review Category
6781	Apply the principles of systems programming for a single-user computer operating system	7	14	D
6782	Create a computer program for a single-user personal computer using an assembler language	7	20	D
6783	Create a computer program for a multi-user computer using an assembler language	7	20	D
18757	Develop a simple online help system to provide a solution for an organisation	4	15	D

Domain Software Development - System Assurance and Documentation

Id	Title	Level	Credit	Review Category
6822	Apply the principles of quality assurance for software development	6	7	D
6823	Apply the principles of reviewing an implemented computer application	6	5	D
6824	Apply the principles of designing and conducting tests for a computer application	7	7	D
6825	Test a computer application	5	5	D
6826	Review the development of a computer application	6	10	D
6827	Create a test environment for computer applications	7	10	D
6828	Design a testing plan for a computer application	7	10	D
6829	Assemble paper-based documentation for a computer application	6	15	D
6830	Test documentation for a computer application	6	10	D
6831	Plan and coordinate the production of documentation for a computer application	7	15	D
6832	Design documentation for a computer application	7	20	D
6833	Create manuscripts for documentation for a computer application	7	20	D
6834	Assemble computer-based documentation for a computer application	7	15	D
6835	Edit documentation for a computer application	7	20	D