

ICT Qualifications Mandatory Review

Draft ICT Qualifications:
Companion to consultation document

25 September – 16 October 2013

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1. Introduction

The New Zealand Qualifications Authority (NZQA) is currently overseeing the *Mandatory Review of Qualifications*, a review of all level 1 to 6 qualifications on the New Zealand Qualifications Framework (NZQF). The review aims to reduce the duplication and proliferation of qualifications; to ensure the qualifications meet the overall needs of the particular sector and are useful, relevant and fit for purpose; and meet the new requirements for listing qualifications on NZQF.

The review of *Information and Communications Technology* (ICT, hereinafter called IT) and Computing is being co-led by NZQA's *National Qualifications Service* and the *Institute of IT Professionals NZ* (IITP). IITP is the independent professional body of the IT sector and is leading the Steering Group, with NQS leading the project team.

Following a broad consultative process, a set of draft qualifications have been developed for consideration and consultation. Please see the [Consultation Document](#) for more information and to provide input into the final direction of these qualifications.

This document contains the draft Computing and ICT Qualifications for consideration and consultation with industry, providers and other interested parties.

Please note that credit allocations for graduate profile outcomes are not required at this stage, and where included they are for indicative purposes only. Further qualification development work will be undertaken in stage two of the review process, with a particular focus on refining the draft qualifications and including specifications and conditions relating to the qualifications and to specific graduate profile outcomes.

Further information about the Mandatory Review of ICT Qualifications, including the working group brief, the draft needs analysis report, a list of all qualifications included in the review, membership of the Steering Group, the Review Plan, and previous consultation documents, can be found on the review webpage: <http://tinyurl.com/ITQuals>.

**Please see the consultation document at
<http://www.iitp.org.nz/files/ICTQualsConsultation3.pdf> to provide input
into the final direction of these qualifications.**

Consultation closes 5pm, Wednesday 16 October 2013

2. Proposed Qualifications Landscape

The Review proposes a suite of 14 new ICT qualifications – six certificates and eight diplomas. The new qualifications are designed to recognise generalist ICT skills and knowledge and also specialist areas, and be achievable in different contexts and to enable graduates to pursue the intended educational and employment outcomes.

The proposal suggests two streams – ‘IT as a tool’ **computing** qualifications (usage of computers and computing devices) and ‘IT as a Profession’ **information technology** qualifications (development towards professional IT roles), which also include a ‘bridging’ transition qualification to enable people to gain skills to equip them for the more technical aspects required of the IT professional suite of qualifications.

The proposed Computing (usage) qualifications includes three computing certificates:

- NZ Certificate in Computing (Fundamentals)(Level 2) (40 credits)
- NZ Certificate in Computing (Level 3) (60 credits)
- NZ Certificate in Computing (Advanced) (Level 4) (60 credits)

The proposed Information Technology (professional) qualifications include three IT certificates and eight diplomas:

- NZ Certificate in IT Essentials (Level 4) (60 credits)
- NZ Certificate in Information Technology (Level 5) (60 credits)
- NZ Diploma in Information Technology (Level 5) (120 credits)
- NZ Diploma in Information Systems (Level 5) (120 credits)
- NZ Diploma in Web Design and Development (Level 5) (120 credits)
- NZ Certificate in Information Technology (Practitioner) (Level 6) (40 credits)
- NZ Diploma in Systems and Network Administration (Level 6) (120 credits)
- NZ Diploma in Software Implementation and Support (Level 6) (120 credits)
- NZ Diploma in Database Administration (Level 6) (120 credits)
- NZ Diploma in Information Systems with strands in Business Analysis, User Experience, IT Project Management, Applied (Level 6) (120 credits)
- NZ Diploma in Software Development (Level 6) (240 credits)

The original landscape of ICT qualifications has been adapted and the proposed version is informed by substantial stakeholder feedback. The approach is intended to meet the identified need for flexible learner pathways and responds to:

- Issues identified in the analysis of current qualifications and their use
- Needs identified in the literature search and wider needs analysis
- Needs identified from ICT industry consultations around job roles and qualification needs
- Feedback from industry, sector and working groups to proposed qualifications

Further development and consistency work will occur following the application for ‘approval to develop’, to refine the graduate profile outcomes, clarify conditions and other requirements applicable for each qualification, and ensure consistency across the suite of ICT qualifications.

The proposed landscape is contained on the following page.

Proposed Computing and IT Qualifications Landscape - September 2013

NZQF Level	IT as a Tool		IT as a profession							
1	General education review	1								
2	NZ Certificate in Computing Fundamentals (40 credits)	2								
3	NZ Certificate in Computing (60 credits)	3								
4	NZ Certificate in Computing (Advanced) (60 credits)	4	NZ Certificate in IT Essentials (60 credits)							
5		5	NZ Certificate in Information Technology (60 credits)							
6		6	NZ Diploma in Systems and Network Administration (120 credits)	NZ Diploma in Software Implementation and support (120 credits)	NZ Diploma in Database Administration (120 credits)	NZ Diploma in Info Systems (strands in BA, ITPM, UX, Applied) (120 credits)	NZ Diploma in Web Design & Development (120 credits)	NZ Diploma in Software Development (240 credits)	NZ Certificate in Information Technology (Practitioner) (40 credits)	
7		7	NZ Cert/Dip in IT Security					NZ Cert/Dip in Software Testing OR Software Security		

Possible pathways.....

Bachelor Degrees (Level 7); Industry Certifications (Level 5, 6, 7)

3. 'IT as a Tool' Qualifications

The 'IT as a Tool' computing qualifications are designed to cover the usage of computers and other technology in a home, work or community setting. The focus is intended to be on the technical skills for using computers and other technology rather than non-technical (soft) skills. These Certificates are expected to provide a good grounding in the use of computers, the Internet and other technology and devices.

Proposed qualifications for 'IT as a Tool' at Levels 2 through 4

- NZ Certificate in Computing (Fundamentals) (Level 2) (40 credits)
- NZ Certificate in Computing (Level 3) (60 credits)
- NZ Certificate in Computing (Advanced) (Level 4) (60 credits)

See below for details of each qualification.

These qualifications have been developed to be delivered as stand-alone qualifications to equip learners with skills as users of a range of digital technologies, and/or be packaged with qualifications in other disciplines to allow broader industry specific programmes to be developed. The qualifications are expected to be delivered and obtained in a range of contexts. They may also show linkages or pathways to international certifications in this space such as the *International Computer Driving Licence (ICDL)* run globally by the not-for-profit ECDL Foundation, and Certiport *Internet and Computing Core Certification IC³* programmes.

The proposed 'IT as a Tool' landscape has been designed to provide Certificates in Computing, with progression from fundamentals through to advanced user. It is not intended to cover the foundation basics of digital literacy, which are intended to be catered for in the foundation or general learning area qualification reviews.

The sum of the three Certificates is likely to cover:

- Computers and Devices;
- Operating Systems, Printing, File management, Networks, IT Security;
- Web Browsing, Search, Communication, Email, Cloud Computing, Social Media, online Collaboration tools and Mobile;
- Base productivity software such as Word Processors, Spreadsheets, Presentation software and the use of Databases (all at basic then advanced levels);
- Concepts, practice and tools around editing online content including basic web design, text and images, as well as how to plan for a design-related project
- ethics and professional standards.

Please note that credit allocations to graduate profile outcome statements are not required at this stage, and where included in the draft qualifications, they are for indicative purposes only.

There has been some discussion around the most appropriate title for these qualifications, and we welcome receiving your views and suggestions in the feedback.

NZ Certificate in Computing (Fundamentals) (Level 2) (40 credits)

This Certificate is intended to cover a range of introductory digital technology skills, and prepare learners with skills to beginner/intermediate level, covering the fundamentals of computing, and may include concepts such as essentials tools to be a digital citizen and operate computers and other devices, including essential basics in productivity software and online activity. Learners will gain a broad range of IT capability and confidence to use a range of technical devices.

Qualification details

Title	New Zealand Certificate in Computing (Fundamentals)		
Version	1	Qualification type	Certificate
Level	2	Credits	40
NZSCED	080904	Management and Commerce – Office Studies – Text processing and office tools	
	0299	Information Technology – Other Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide businesses, organisations and communities with graduates who have attained a range of introductory digital technology skills, and who can be employed in a range of general entry level roles. It also recognises the achievement of relevant knowledge and skills of those already employed.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. Businesses, organisations and communities will benefit from having people who have acquired digital technologies skills that contribute to improving performance and productivity, and individuals will benefit from being more confident and capable in the use of a range of digital tools.</p> <p>Graduates will be capable of using digital technologies to produce and process information, and operate effectively in New Zealand's multi-cultural and digital environment. They will be able to perform a range of basic tasks independently in familiar situations, and in a supervised work environment.</p>		
Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Use the main features, functions and settings of common digital tools and software to create, access, organise, present and store information/ data using basic tools appropriate to the context (25 credits) 2. Use digital systems, search engines and common digital tools to connect with others; and recognise and apply some conventions of online etiquette (5 credits) 3. Demonstrate knowledge of the types and purpose of 	

		<p>common digital tools and software. (3 credits).</p> <ol style="list-style-type: none"> 4. Recognise basic risks and compliance in the context of using digital tools, and implement basic security requirements. (3 credits) 5. Demonstrate knowledge of basic concepts, terms, abbreviations and symbols (2 credits) 6. Trouble shoot and fix simple or routine problems (2 credits)
	<p>Education pathway</p>	<p>This qualification provides a pathway into a range of higher level qualifications. This may include further study in a variety of areas at level 3 or higher, such as the:</p> <ul style="list-style-type: none"> - NZ Certificate in Computing (Level 3) - NZ Certificate in Business Administration and Technology (Level 3) - NZ Certificate in IT Essentials (Level 4) - NCEA. <p>This qualification can complement other qualifications in specific industries. Graduates may also be equipped to attempt vendor certifications such as</p>
	<p>Employment pathway</p>	<p>This qualification may assist graduates to obtain entry level positions in a range of industries.</p>

NZ Certificate in Computing (Level 3) (60 credits)

This Certificate is intended to cover a range of digital technology skills, and prepare learners with skills to effectively use productivity software essentials such as word, spreadsheets and presentation, and possibly the use of other applications such as web or image editing, database, and project or financial management software tools.

Whilst the level 2 qualification is designed to equip learners to use a range of digital devices and applications, the level 3 qualification also expects to equip learners to do so for a wider range of applications for a specified purpose, and with relevant quality outputs to professional standards. Graduates of the level 3 qualification are also expected to be equipped to progress to the NZ Certificate in IT Essentials (Level 4) transition qualification, and level 5 'IT as a profession' qualifications, except for the Software Development qualification (which requires discreet mathematics skills and the *NZ Certificate in IT Essentials (Level 4)* or equivalent preparation).

Qualification details

Title	New Zealand Certificate in Computing		
Version	1	Qualification type	Certificate
Level	3	Credits	60
NZSCED	080904	Management and Commerce – Office Studies – Text processing and office tools	
	0299	Information Technology – Other Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained digital technology skills and behave in competent, skillful and effective ways, who can be employed in a range of roles in a variety of industries. It builds on the skills developed at level 2, and it also recognises the achievement of relevant knowledge and skills of those already employed. This qualification can complement other qualifications in specific industries.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. Businesses, organisations and communities will benefit from having people who have acquired digital technologies skills that contribute to improving performance and productivity.</p> <p>Graduates will be capable of using digital technologies to produce and process information, and operate effectively in New Zealand's multi-cultural and digital environment. They will be able to perform a range of tasks independently in familiar situations, and with limited supervision in a work environment.</p>		

Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Effectively select, use and apply familiar tools, features, and functions across a range of software applications to combine and manipulate data and to effectively and efficiently produce specified outcomes. (20-22 credits) 2. Investigate, plan, design and create solutions for a specified purpose. (10-15 credits) 3. Apply procedures and solutions to recognised risks, compliance and security requirements in an organisational context when using digital tools and digitally stored and transmitted information. (5-7 credits) 4. Demonstrate knowledge of and consistently apply appropriate ethical and professional standards, principles and practices. (4-7 credits) 5. Establish and maintain communication and connections with others, and use appropriate online etiquette. (4-7 credits) 6. Use a variety of digital devices that can be synchronised with data transferred across multiple platforms. (3-4 credits) 7. Trouble-shoot and fix a range of familiar problems. (2-3 credits)
	Education pathway	<p>This qualification provides a pathway into a range of higher level qualifications. Graduates may progress to further study in a variety of areas at level 4 or higher, such as:</p> <ul style="list-style-type: none"> - NZ Certificate in Computing (Advanced) (Level 4), or - NZ Certificate in Business Administration and Technology (Level 4) or - NZ Certificate in IT Essentials (Level 4), or - NZ Certificate in Information Technology (Level 5) or - NZ Diploma in Information Technology (Level 5).or - NZ Diploma in Information Systems (Level 5) <p>This qualification can complement other qualifications in specific industries. Graduates may also be equipped to attempt industry vendor certifications such as...</p>
	Employment pathway	<p>This qualification will equip graduates with intermediate level transferable digital skills which will assist them to obtain entry level positions in a range of industries.</p>

NZ Certificate in Computing (Advanced) (Level 4) (60 credits)

This Certificate is intended to cover the more advanced use of productivity software and other tools and technical devices. It may provide opportunities for specializing in particular areas, and may include some further aspects of 'IT as profession' preparation.

This qualification is seen as important for learners that want to gain advanced technical user skills, and is seen as a pathway into work or higher-level qualifications. It is suitable preparation for graduates to progress to Information Technology, Information Systems or Web design/development qualifications.

This qualification is designed to extend the professional capabilities of advanced users of technology for either employment or further study. This is distinct from the role of the 'NZ Certificate in IT Essentials (Level 4)' qualification, which is to prepare learners for further IT study by providing core essentials for learners to cope with the academic and technical demands of higher level IT qualifications.

Qualification details

Title	New Zealand Certificate in Computing (Advanced)		
Version	1	Qualification type	Certificate
Level	4	Credits	60
NZSCED	080904	Management and Commerce – Office Studies – Text processing and office tools	
	0299	Information Technology – Other Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained advanced digital technology skills and who can be employed in a wide range of roles in a variety of industries. It builds on the skills developed at level 3, and it also recognises the achievement of relevant knowledge and skills of those already employed. This qualification can complement other qualifications in specific industries.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. Businesses, organisations and communities will benefit from having people who have acquired advanced digital technologies skills that contribute to improving performance and productivity.</p> <p>Graduates will be capable of using digital technologies to produce and process information, and operate effectively in New Zealand's multi-cultural and rapidly changing digital environment. They will be able to perform a wide range of tasks under broad guidance in a work environment, and may demonstrate self-management and some responsibility for the performance of others.</p>		

Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Select and apply a range of digital tools to investigate, plan, design and create solutions for familiar and sometimes unfamiliar situations (10 credits) 2. Effectively select, use and apply tools, features, and functions across a broad range of software applications to combine and manipulate data, to efficiently produce specified outcomes in a range of familiar and unfamiliar settings (20 credits) 3. Use a range of digitally based technology and applications to access and filter data, extract, organise, integrate and share relevant information in increasingly effective ways (10 credits). 4. Use digital technologies and systems safely, legally and ethically when gathering, storing, accessing and sharing information, with a growing awareness of the permanence and transparency of all activities (5 credits) 5. Identify trends and apply procedures and solutions to familiar and unfamiliar risks, compliance and security requirements in an organisational context when using digital tools and digitally stored and transmitted information. (7 credits) 6. Collaborate and communicate information and ideas to a range of audiences, and explore ways of connecting with others, paying attention to online etiquette (8 credits)
	Education pathway	<p>This qualification provides a pathway into a range of higher level qualifications. This may include further study in a variety of areas at level 5 or higher, such as the:</p> <ul style="list-style-type: none"> - NZ Certificate in Information Technology (Level 5), - NZ Diploma in Information Technology (Level 5), - NZ Diploma in Information Systems (Level 5/6); or the - NZ Certificate in Business Administration and Technology (Level 5). <p>This qualification is designed as an open entry qualification, and also provides an education pathway from:</p> <ul style="list-style-type: none"> - NCEA Level 2 - Level 3 NZ Certificate in Computing - Level 3 NZ Certificate in Business Administration and Technology <p>Graduates may also be equipped to attempt industry vendor certifications, such as...</p>
	Employment pathway	<p>This qualification will equip graduates with proficiency in a range of transferable digital skills which will assist them to obtain positions under broad guidance in a range of industries, and/or to prepare for promotion.</p>

4. 'IT as a Profession' Qualifications

The 'IT as a Profession' Qualifications are intended to provide a solid grounding and introduction to the IT Profession. The suggested qualifications landscape has three broad pathways:

- **Information Technology**, covering the more technical aspects of the industry such as networking, technical work including helpdesk functions, and database administration.
- **Information Systems**, covering the more process-oriented side of the profession and leading into careers in Business Analysis, IT Project Management, User Experience (UX) and potentially Database Administration or Management. This would likely be a more attractive pathway for less technically minded individuals who still wanted to enter the IT industry, and there is evidence of a strong need for this in IT.
- **Software Development**, implemented in various contexts and leading into programming careers, and preparing learners for further study and specialisation in Software Testing and Software Security.

The proposed landscape includes a bridging qualification to prepare learners for further IT study; an entry-level Certificate with an expectation of providing a common core and a taste of the range of IT options; and a suite of qualifications in the identified broad pathways.

Proposed qualifications for 'IT as a Profession' at Levels 4 through 6

- NZ Certificate in IT Essentials (Level 4) (60 credits)
- NZ Certificate in Information Technology (Level 5) (60 credits)
- NZ Diploma in Information Technology (Level 5) (120 credits)
- NZ Diploma in Information Systems (Level 5) (120 credits)
- NZ Diploma in Web Design and Development (Level 5) (120 credits)
- NZ Certificate in Information Technology (Practitioner) (Level 6) (40 credits)
- NZ Diploma in Systems and Network Administration (Level 6) (120 credits)
- NZ Diploma in Software Implementation and Support (Level 6) (120 credits)
- NZ Diploma in Database Administration (Level 6) (120 credits)
- NZ Diploma in Information Systems with strands in Business Analysis, User Experience, IT Project Management, and Applied (Level 6) (120 credits)
- NZ Diploma in Software Development (Level 6) (240 credits)

See below for details of each qualification.

Please note that credit allocations to graduate profile outcome statements are not required at this stage, and where included in the draft qualifications, they are for indicative purposes only.

NZ Certificate in IT Essentials (Level 4) (60 credits)

The *NZ Certificate in IT Essentials* is designed as a bridging qualification for those with no or very little preparatory education such as the digital technologies achievement standards at school, limited or no practical experience in IT, or as a pathway from the 'IT as a Tool' Qualifications to the 'IT as a Profession' Qualifications.

This Certificate is proposed to cover the core concepts of IT and serve as an introductory course prior to the Level 5 qualifications. Under this model, those intending to continue on to the Level 5 Certificate or Diplomas but with no IT experience or background skills might complete this Certificate, to better equip them with the essential skills to cope with the academic and technical requirements of the higher level suite of IT qualifications.

Qualification details

Title	New Zealand Certificate in IT Essentials		
Version	1	Qualification type	Certificate
Level	4	Credits	60
NZSCED	02	Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to prepare graduates with the essential skills for further study which will equip them to work in the field of IT as a profession.</p> <p>Businesses, organisations and communities will benefit from having people who are qualified in key entry-level information technology skills commonly required in organisations, and have gained the skills and knowledge required to continue their professional development.</p> <p>The qualification is designed to meet the training and education needs of a range of learners who have basic IT knowledge and skills, or as a starting point for individuals wishing to move to a career in IT, and may build from NZ Certificates in Computing or equivalent.</p> <p>Graduates will be capable of using relevant computer applications to plan and create outcomes for an organisation, and demonstrate skills and knowledge relevant to a specified discipline within IT. They will also operate under broad guidance and be capable of finding solutions to familiar and sometimes unfamiliar problems within organisations, and communicating with relevant stakeholders in a professional manner.</p>		
Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate skills and knowledge relevant to a specified discipline within IT. (25-30 credits) <i>Develop programming fundamentals and apply techniques in software development. (10 credits)</i> <i>Develop hardware, network and operating system fundamentals (10 credits)</i> 	

		<p><i>Explore graphics and multimedia and apply techniques in media design. (5-10 credits)</i></p> <ol style="list-style-type: none"> 2. Effectively use a range of appropriate applications to document or communicate data or information. (10-15 credits) 3. Select and apply appropriate professional and ethical principles and practices. (5 credits) 4. Select and apply appropriate communication modes for a range of contexts. (10 credits) 5. Select and apply project management and planning tools to review and revise briefs and outcomes in on-going consultation with stakeholders. (5-10 credits)
	<p>Education pathway</p>	<p>The qualification provides a pathway into further study to become an IT professional.</p> <p>Graduates may progress to</p> <ul style="list-style-type: none"> • NZ Certificate in Information Technology (Level 5), • NZ Diploma in Information Technology (Level 5) • NZ Diploma in Information Systems (Level 5) • NZ Diploma in Web Design and Development (Level 5) • NZ Diploma in Software Development (Level 6) <p>or similar qualifications.</p> <p>They may also be equipped to attempt industry vendor certifications such as CompTIA A+, Microsoft and Cisco.</p> <p>This qualification is designed as an open entry qualification, and also provides an education pathway from:</p> <ul style="list-style-type: none"> • NCEA Level 2 • Level 3 NZ Certificate in Computing • Level 3 NZ Certificate in Business Administration and Technology
	<p>Employment pathway</p>	<p>Graduates of this certificate will have the transferable skills and knowledge to work in a range of roles in an organisation, including some in the IT profession under broad guidance. These roles may include computer technician, help desk, technical support, business support, retail. The intention of this qualification is primarily to provide a pathway to further IT study.</p>

NZ Certificate in Information Technology (Level 5) (60 credits)

The *NZ Certificate in Information Technology* is intended to provide the foundational content for those wishing to practice within the field of IT, giving learners a taste of each area plus core. This might include the fundamentals of computing concepts and practice including basics such as installation and configuring PCs, Laptops and other devices, basic networking, configuring operating systems, email, and mobile devices, as well as introductory concepts of software development, communications and help desk and tech support.

A programme of study for this Certificate might align with [CompTIA A+ Certification](#), but with additional content around ethics, professional practice and organisational structure matters (such as that found in the Institute of IT Professionals' *Professional Knowledge Curriculum*), communication essentials, and a basic introduction to software development and information systems.

Those completing this Certificate should have a clearer idea about which IT educational pathway to continue with, having been introduced to a range of areas to help determine a suitable IT specialisation to progress to.

The Certificate is intended to meet the supply and demand needs of learners and industry in providing the short/sharp training that is required to enable learners to remain up to date in a sector that operates in an ever changing landscape. The intent is to produce a graduate profile that is sufficiently generic and flexible enough to enable a range of programmes and internationally recognised vendor certifications to be aligned to the certificate, through programme design.

Qualification details

Title	New Zealand Certificate in Information Technology		
Version	1	Qualification type	Certificate
Level	5	Credits	60
NZSCED	02	Information Technology	
DAS classification			
Qualification developer	Tbc		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with work ready graduates who have attained the broad core skills required for those wishing to prepare to practice in the field of Information Technology, or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. The target market includes those who are seeking to prepare for a range of IT professional qualifications or roles. It builds on the learners existing computing or core IT generalist skills developed in previous qualifications, or equivalent prior experience. Graduates will be able to apply core professional and technical</p>		

	<p>skills required to prepare for a sustainable career in IT, and meet the requirements of external industry certification.</p> <p>Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in New Zealand’s multicultural and rapidly changing digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for IT Professionals, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>	
Outcome Statement	<p>Graduate profile</p>	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Select and apply the fundamentals of computing concepts and practice. (30 credits) 2. Demonstrate knowledge of and apply the principles of correct design, development and implementation of simple applications. (10 credits) 3. Select and apply problem-solving, and decision-making techniques relevant to Information Technology in an organisational environment. (5 credits) 4. Select and apply communication, personal and interpersonal skills relevant to Information Technology in an organisational environment. (8 credits) 5. Select and apply professional and ethical principles relevant to Information Technology in an organisational environment. (7 credits)
	<p>Education pathway</p>	<p>This qualification provides a pathway to the range of ‘IT as a Profession’ qualifications. This may include:</p> <ul style="list-style-type: none"> • NZ Diploma in Information Technology (Level 5), • NZ Diploma in Information Systems (Level 5), • NZ Diploma in Web Design and Development (Level 5) • NZ Diploma in Software Development (Level 6) <p>Other possible pathways include under graduate degree qualifications and graduates may also be equipped to attempt industry vendor Certifications such as CompTIA A+, which is a starting point for a career in IT.</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • NCEA Level 2 or 3, with appropriate credits in maths and digital technologies subjects • Level 3 NZ Certificate in Computing • Level 4 NZ Certificate in Computing (Advanced) • Level 4 NZ Certificate in IT Essentials
	<p>Employment pathway</p>	<p>Graduates of this qualification will have the skills and knowledge to work in the IT industry in a range of support roles for: computer technician, helpdesk, technical support, implementation and application support, network administrator, and system administrator.</p>

NZ Diploma in Information Technology (Level 5) (120 credits)

The *NZ Diploma in Information Technology* is intended to provide options for the more technical aspects of the industry. Those who have started out on a Certificate pathway could potentially upgrade to the full Diploma, having developed some soft skills such as communication, teamwork, problem solving, and an understanding of ethics and professional practice; and to obtain further depth in the technical areas. The Diploma has been developed to provide a broad, generalist understanding of IT, as there is seen to be significant overlap in the technical skills required to prepare for a range of IT employment pathways, such as:

- *Networking*, which might (for example) align to the Network+ vendor certification;
- *Computing Technician*, more advanced concepts and practices around servicing computers and other technology;
- *Help Desk and Tech Support*, exploring communication and work flow concepts around help desks and providing tech support

The generalist *NZ Diploma in Information Technology* has been designed to equip learners with the soft skills and technical content to meet the needs of a range of potential IT roles.

From a pathway perspective, learners might exit to industry as a computing technician, help desk or other support role having completed this Diploma, or carry on to the more specialised Level 6 Diplomas.

Qualification details

Title	New Zealand Diploma in Information Technology		
Version	1	Qualification type	Diploma
Level	5	Credits	120
NZSCED	02	Information Technology	
DAS classification			
Qualification developer	Tbc		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained a broad understanding of the core concepts and practical skills in Information Technology, including hardware, networks and operating systems; to enter into employment and build a sustainable career in an IT technical role in a range of organisational contexts, or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. The target market includes those who are seeking to prepare for a range of technical roles, such as computer technician, help desk or tech support. It builds on the learners existing computing or core IT generalist skills developed in previous qualifications, or equivalent prior experience.</p> <p>Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in</p>		

	<p>New Zealand’s multicultural and rapidly changing digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for IT Professionals who can understand the IT environment, the needs of users, and who can provide IT support; and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>	
Outcome Statement	<p>Graduate profile</p>	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate a broad operational knowledge of a range of hardware, storage systems, operating systems, applications, and database types. 2. Demonstrate a broad operational knowledge of networking, network services and cloud technologies. 3. Use operating systems, application software and scripting to meet organisational requirements. 4. Troubleshoot and resolve hardware, software, networking and security problems. 5. Demonstrate knowledge of a range of tools to automate tasks, including scripting. 6. Demonstrate knowledge of the issues around IT security and select and apply a range of solutions. 7. Demonstrate knowledge of and implement IT best practice (change and incident management, and business continuity). 8. Demonstrate knowledge of and apply the principles of correct design, development and implementation of simple applications. (10 credits) 9. Select and apply a range of problem-solving and decision-making techniques relevant to Information Technology in an organisational environment. (5 credits) 10. Select and apply communication, information design, report and technical writing skills relevant to Information Technology roles in an organisational environment. (8 credits) 11. Select and apply personal and interpersonal skills, including teamwork, customer service, relationship and conflict management, and contemporary cultural issues, relevant to Information Technology roles in an organisational environment. (7 credits) 12. Takes responsibility for the application of professional, sustainable, socially responsible and ethical principles relevant to Information Technology roles and the Treaty of Waitangi. (8 credits) 13. Demonstrate knowledge of and appreciate the implications of managing and complying with legal, regulatory, privacy and security responsibilities. (7 credits)
	<p>Education pathway</p>	<p>The qualification provides a pathway to a level 6 specialist IT qualification. This may include:</p> <ul style="list-style-type: none"> • NZ Diploma in Systems and Network Administration (Level 6) • NZ Diploma in Software Implementation and Support (Level 6) • NZ Diploma in Information Systems (Level 6) • NZ Diploma in Software Development (Level 6)

		<p>Other possible pathways include degree qualifications and higher level industry certifications.</p> <p>Graduates may also be equipped to attempt industry vendor qualifications such as CompTIA A+, N+, ITIL Foundation, and possibly Microsoft Operating Systems certification (MCSA), Linux certifications (RHCSA, LPIC-1, CompTIA Linux+), Cisco certifications (CCENT, CCNA).</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • NCEA Level 2 or 3, with appropriate credits in maths and digital technologies subjects • Level 3 NZ Certificate in Computing • Level 4 NZ Certificate in Computing (Advanced) • Level 4 NZ Certificate in IT Essentials • Level 5 NZ Certificate in IT
	<p>Employment pathway</p>	<p>Graduates of this diploma will have the skills and knowledge to work or gain employment in roles such as computing technician, help desk and technical support officer, junior network administrator, junior network engineer, and junior applications support analyst.</p>

NZ Diploma in Information Systems (Level 5) (120 credits)

The *NZ Diploma in Information Systems* is intended to provide an option for the more process-focused areas of the profession, such as those preparing for Business Analysis, Project Management and User Experience (UX) related roles.

Those who have started out on a Certificate pathway could potentially upgrade to the full Diploma, having developed some soft skills such as communication, teamwork, problem solving, and an understanding of ethics and professional practice; and to obtain further depth in the process areas such as business analysis, IT project management, user experience, and data administration.

The *NZ Diploma in Information Systems* has been developed to provide a broad, generalist understanding of IS, as there is seen to be significant overlap in the technical skills required to prepare for a range of IS employment pathways. It is designed to equip learners with the soft skills and technical content to meet the needs of a range of potential IS roles.

From a pathway perspective, learners might exit to industry in a range of entry level IS roles such as application administrators, project administration, process mapping, records management or other support roles having completed this Diploma, or carry on to further develop a specialised area in the Level 6 NZ Diploma in Information Systems.

Qualification details

Title	New Zealand Diploma in Information Systems		
Version	1	Qualification type	Diploma
Level	5	Credits	120
NZSCED	0201	Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained sufficient Information Systems (IS) skills to enter into employment in an entry level IS role in a range of organisational contexts, or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. It builds on the generalist skills developed at level 5 in the NZ Certificate in Information Technology, or equivalent prior experience, and graduates will be introduced to a range of Information Systems concepts. Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for people who are experienced and qualified in information systems, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>		

Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Select and apply project management elements to an IT related project. (15 credits) 2. Demonstrate broad technical and theoretical knowledge of and apply skills in investigation, analysis, and review of business logic and processes. (10 credits) 3. Demonstrate broad technical and theoretical knowledge of and apply skills in human computer interaction and user interface design. (15 credits) 4. Demonstrate broad technical and theoretical knowledge of and apply skills in a systematic approach to the design, development, operation and maintenance of software systems. (10 credits) 5. Demonstrate broad technical and theoretical knowledge of and apply skills in database concepts and database management. (10 credits) 6. Demonstrate knowledge of and apply the principles of correct design, development and implementation of simple applications. (10 credits) 7. Select and apply problem-solving and decision-making techniques relevant to Information Technology in an organisational environment. (5 credits) 8. Select and apply communication, information design, report and technical writing skills relevant to Information Systems roles in an organisational environment. (8 credits) 9. Select and apply personal and interpersonal skills, including teamwork, customer service, relationship and conflict management, and contemporary cultural issues, relevant to Information Systems roles in an organisational environment. (7 credits) 10. Take responsibility for the application of professional, sustainable, socially responsible and ethical principles relevant to Information Systems roles and the Treaty of Waitangi. (8 credits) 11. Demonstrate knowledge of and appreciate the implications of managing and complying with legal, regulatory, privacy and security responsibilities. (7 credits) 12. Select and apply the fundamentals of current and emerging computing concepts and practice. (15 credits)
	Education pathway	<p>The qualification provides a pathway to a specialist IS qualification. This may include:</p> <ul style="list-style-type: none"> • NZ Diploma in Information Systems (level 6) • NZ Diploma in Database Administration (level 6) • NZ Diploma in Software Development (level 6) <p>Other possible pathways include degree qualifications and higher level industry certifications.</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • NCEA Level 2 or 3 • NZ Certificate in Computing (Level 3) • NZ Certificate in Computing (Advanced) (Level 4) • NZ Certificate in IT Essentials (Level 4) • Level 5 NZ Certificate in Information Technology • other relevant Level 4 or 5 qualifications e.g. Business Administration
	Employment pathway	<p>Graduates of this diploma will have the skills and knowledge to work or gain employment in roles such as process mapping, project administration, records management, junior application administrators, and other entry level IS roles.</p>

NZ Diploma in Web Design and Development (Level 5) (120 credits)

Sector feedback identified there may be a need for a one year qualification in web development at Level 5, and the Steering Group asked the working group to consider this in more detail. It was proposed that this qualification include some design principles but primarily focus on the ‘back end’ web development with some ‘front end’ web design, and include implementation.

The *NZ Diploma in Web Design and Development* includes some of the soft skills and core content common across all IT qualifications, then forks into more in-depth web software development combined with implementing a web design (e.g. usage of web CRM systems and basic HTML, CSS and scripting). This qualification covers concepts and execution of web and interface design, plus the implementation of this through CRM type systems and mark-up language such as HTML, style sheets etc.

The *NZ Diploma in Web Design and Development* has been developed to provide graduates with sufficient IT knowledge, practices and technical skills to enter into employment in a role in customisation of web content management system solutions, or in a graphic design organisation, or to proceed to further study.

Qualification details

Title	New Zealand Diploma in Web Design and Development		
Version	1	Qualification type	Diploma
Level	5	Credits	120
NZSCED	02 1005	Information Technology Creative Arts – Graphic and Design Studies	
DAS classification			
Qualification developer	Tbc		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained sufficient IT knowledge, practices and technical skills to enter into employment in a role in customisation of web content management system solutions, or in a graphic design organisation, or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. The target market includes those seeking to develop and apply skills in the concept and execution of web and interface design and development.</p> <p>Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in New Zealand’s multicultural and rapidly changing digital environment.</p> <p>We need this qualification because of a skill shortage, the</p>		

	<p>rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy, including the growing market for promotional websites.</p>	
Outcome Statement	<p>Graduate profile</p>	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate broad knowledge to determine client requirements, prepare and present recommended solution to client. (15-20 credits) 2. Write scripts appropriate to contexts using appropriate frameworks and libraries. (25-30 credits) 3. Design and implement interfaces to enhance user experience and functionality. (15 credits) 4. Install and configure selected appropriate pre-packaged solution. (10 credits) 5. Select and install appropriate plug in modules. (15 credits) 6. Test functionality and usability to meet client requirements. (15 credits) 7. Select and apply communication, information design, personal and interpersonal skills relevant to Information Technology in an organisational environment. (8-10 credits) 8. Select and apply professional and ethical principles in a socially responsible manner relevant to Information Technology, in an organisational environment. (5-7 credits) 9. Demonstrate knowledge of and appreciate the implications of managing and complying with legal, regulatory, privacy and security responsibilities. (5-7 credits)
	<p>Education pathway</p>	<p>Graduates of this qualification may progress to a higher level qualification in computing IT or to the creative area.</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • NCEA Level 2 or 3 with appropriate credits in digital technologies and design subjects • Level 3 NZ Certificate in Computing • Level 4 NZ Certificate in Computing (Advanced) • Level 4 NZ Certificate in IT Essentials • Level 5 NZ Certificate in Information Technology <p>It is also expected to provide a pathway from the yet to be developed digital design related qualifications that may emerge from the mandatory review of creative arts qualifications.</p>
	<p>Employment pathway</p>	<p>Graduates of this qualification will have the skills and knowledge to be employed in a junior role in an organisation that provides customization of package software solutions, or in a graphic design organisation.</p>

NZ Certificate in Information Technology (Practitioner) (Level 6) (40 credits)

Sector feedback identified there may be a need for a short qualification that enabled IT practitioners to update their knowledge and specialist skills in a specific area of IT practice, in response to the constantly changing needs and demands of the dynamic IT environment.

The *NZ Certificate in Information Technology (Practitioner)* is intended to meet the supply and demand needs of learners and industry in providing the short, sharp training that is required to enable learners to remain up to date in a sector that operates in an ever changing landscape. The intent is to produce a graduate profile that is sufficiently generic and flexible enough to enable a range of programmes and internationally recognised vendor certifications to be aligned to the certificate, through programme design.

Further development work will be required to determine what qualifiers or optional endorsements may be required to more clearly identify the context the qualification has been obtained in.

Qualification details

Title	New Zealand Certificate in Information Technology (Practitioner)		
Version	1	Qualification type	Certificate
Level	6	Credits	40
NZSCED	02	Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have IT practical experience and who have updated their knowledge and specialist skills in a specific area of IT practice, in response to the changing needs and demands of the dynamic IT environment.</p> <p>The qualification is designed to meet the global training and education needs of IT practitioners to remain current in an area of IT practice. New Zealand businesses, organisations and communities will benefit from having an on-going supply of IT practitioners who are experienced and qualified in an area of current IT practice, and who may also meet the requirements of internationally recognised industry certifications.</p> <p>Graduates will be able to apply current skills and knowledge to operate effectively in New Zealand's multi-cultural and dynamic digital environment, and meet the strategic and changing needs of a rapidly emerging digitization of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>		

Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate and apply new knowledge and skills with depth within a specialised field of IT work. 2. Operate within the selected specialised area knowledgeably, productively and professionally. 3. Evaluate and apply specialised knowledge to actual problems, and generate solutions to familiar and unfamiliar problems in the specialised IT field in dynamic contexts.
	Education pathway	<p>This qualification is designed for individuals with practical experience in the field of IT, or those who have completed studies that now require updating in a specific area of IT practice, primarily for employment outcomes. This qualification may also provide a pathway to further ICT qualifications.</p> <p>This qualification may equip learners to meet the needs for an optional international vendor certificate. For example:</p> <ul style="list-style-type: none"> • CCNA – network administration and support; • Microsoft – server administration • SQL – Database management • C# - Application development • ASP.net – web development <p>With the appropriate practical work experience, this qualification may provide a pathway from a range of qualifications, including:</p> <ul style="list-style-type: none"> • Level 5 NZ Certificate in Information Technology • Level 5 NZ Diploma in Information Technology • Level 5 NZ Diploma in Information Systems • Level 5 NZ Diploma in Web Design and Development
	Employment pathway	<p>Graduates of this qualification will have the current skills and knowledge to be employed in an IT role specific to the area of IT practice their programme has focused on.</p>

NZ Diploma in Systems and Network Administration (Level 6) (120 credits)

The *NZ Diploma in Systems and Network Administration* is intended to provide a pathway from the *NZ Diploma in Information Technology (Level 5)*, and focus on extending the knowledge and technical expertise to equip learners to specialise in systems and network administration.

The Diploma will share some of the core skills required of all IT graduates at Level 6, and include specialised learning such as networking, scripting, systems, data storage and security, and IT business continuity. It would also further equip graduates for roles such as IT technician, help desk or desktop support, junior network engineer, junior systems administrator or junior applications support analyst.

Qualification details

Title	New Zealand Diploma in Systems and Network Administration		
Version	1	Qualification type	Diploma
Level	6	Credits	120
NZSCED	02	Information Technology	
DAS classification			
Qualification developer	Tbc		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained a sufficient range of specialist professional and technical skills to enter into employment in, or advance a sustainable career in, systems and network administration.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. It builds on the generalist skills developed at level 5 in the NZ Diploma in Information Technology, or equivalent prior experience. Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for people who are experienced and qualified in the management of systems and networks, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>		
Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate specialised knowledge of networking protocols and devices. 2. Demonstrate specialised knowledge of data, host and network security 3. Automate tasks using scripting in a variety of contexts. 4. Implement and configure network and directory services. 5. Explain and implement pro-active maintenance techniques. 	

		<ol style="list-style-type: none"> 6. Analyse requirements and implement solutions for system virtualisation. 7. Analyse requirements and implement solutions to meet business data storage requirements. 8. Analyse requirements and generate solutions for business continuity within the IT context. 9. Select and apply a range of professional skills to analyse, plan, implement and document systems and processes, and demonstrate knowledge of the application of sustainable, socially responsible and ethical principles, and the implications of regulatory, privacy and security responsibilities relevant to systems and network administration related IT roles. (10-15 credits) 10. Analyse and generate solutions to familiar and unfamiliar problems by selecting and applying various methodologies of project management to an IT related project. (10 credits). 11. Demonstrate knowledge of and apply the principles of correct design, development and implementation of simple applications. (10 credits)
	<p>Education pathway</p>	<p>The qualification provides a pathway to further specialisation through industry specific training, for example, IT Security.</p> <p>Other possible pathways include degree qualifications and higher level industry certifications.</p> <p>Graduates may be equipped to attempt industry vendor qualifications such as Microsoft Operating Systems certification (MCSA), Linux certifications (RHCSA, LPIC-1, CompTIA Linux+), Cisco certifications (CCENT, CCNA).</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • Level 5 NZ Certificate in Information Technology • Level 5 NZ Diploma in Information Technology
	<p>Employment pathway</p>	<p>Graduates of this qualification will have the skills and knowledge to gain employment in roles such as IT technician, help desk/level 1, desktop support, junior network administrator, junior network engineer, junior system administrator, or junior applications support analyst.</p> <p>Graduates also have the background to move into more advanced roles over time including network administrator, network engineer, system administrator, application support analyst, and senior roles.</p>

NZ Diploma in Software Implementation and Support (Level 6) (120 credits)

The *NZ Diploma in Software Implementation and Support* is intended to provide a pathway from the *NZ Diploma in Information Technology (Level 5)*, and focus on extending the knowledge and technical expertise to equip learners to specialise in software implementation and support.

The Diploma will share some of the core skills required of all IT graduates at Level 6, and include specialised learning including a range of professional and technical software implementation, advice and support skills to enter into employment in, or advance a career in, software implementation and support. It would also further equip graduates for roles such as IT Technician, help desk roles, or applications support analyst.

Qualification details

Title	New Zealand Diploma in Software Implementation and Support		
Version	1	Qualification type	Diploma
Level	6	Credits	120
NZSCED	02	Information Technology	
DAS classification			
Qualification developer	Tbc		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained a sufficient range of specialist professional and technical software implementation, advice and support skills to enter into employment in, or advance a sustainable career in, software implementation and support.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. It builds on the generalist skills developed at level 5 in the NZ Diploma in Information Technology, or equivalent prior experience. Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for people who are experienced and qualified in the deployment and management of application software, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>		
Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Implement an automated deployment of an operating system. 2. Deploy, manage and configure user applications to organisation specifications. 3. Demonstrate specialised knowledge of data, host and network security 	

		<ol style="list-style-type: none"> 4. Manage the migration and security of user data. 5. Provide tailored end-user training, documentation and support. 6. Provide user acceptance testing. 7. Implement a system for updating the operating system and applications using automation. 8. Create a testing environment that simulates a production environment to be used for feasibility, piloting and user testing. 9. Analyse and apply appropriate solutions to ensure integrity, resilience and compliance with system security, protection, and licensing requirements, to industry best practice. 10. Select and apply a range of professional skills to analyse, plan, implement and document systems and processes and demonstrate knowledge of the application of sustainable, socially responsible and ethical principles, and the implications of regulatory, privacy and security responsibilities relevant to software implementation and support related Information Technology roles. (10-15 credits) 11. Analyse and generate solutions to familiar and unfamiliar problems by selecting and applying various methodologies of project management to an IT related project. (10 credits). 12. Demonstrate knowledge of and apply the principles of correct design, development and implementation of simple applications. (10 credits)
	<p>Education pathway</p>	<p>The qualification provides a pathway to further specialisation through industry specific training, which may include the NZ Diploma in Information Systems (Level 6), or other Business Analyst qualifications.</p> <p>Other possible pathways include degree qualifications and higher level industry certifications.</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • Level 5 NZ Certificate in Information Technology • Level 5 NZ Diploma in Information Technology
	<p>Employment pathway</p>	<p>Graduates of this qualification will have the skills and knowledge to gain employment in roles such as IT technician, help desk/level 1 or 2, desktop support, junior applications support analyst.</p> <p>After some initial industry experience, graduates can move into an implementation and application support officer role.</p> <p>Graduates may also have the background to move into more advanced roles over time including consultant, business analyst and project manager.</p>

NZ Diploma in Database Administration (Level 6) (120 credits)

The *NZ Diploma in Database Administration* is intended to provide a pathway from the *NZ Diploma in Information Technology (Level 5)* or the *NZ Diploma in Information Systems (Level 5)*, and focus on extending the knowledge and technical expertise to equip learners to specialise in database administration.

The Diploma will share some of the core skills required of all IT graduates at Level 6, and include specialised learning such as a range of professional and technical data modeling, database systems, business intelligence, infrastructure and database performance monitoring and tuning skills, to enter into employment or advance a career in database administration.

Qualification details

Title	New Zealand Diploma in Database Administration		
Version	1	Qualification type	Diploma
Level	6	Credits	120
NZSCED	0201	Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained sufficient Database Administration (DBA) skills to enter into employment in an entry level database administrator role in a range of organisational contexts, or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. It builds on the generalist skills developed at level 5 in the NZ Diploma in Information Systems or NZ Diploma in Information Technology, or equivalent prior experience, and graduates will be equipped with a range of database administration technical and theoretical knowledge and skills to design, develop, implement and operate database systems. Graduates will be capable of operating both independently and as part of a team, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for people who are experienced and qualified in database administration, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>		
Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate specialised technical and theoretical knowledge of data modelling of business processes. (10 credits) 2. Demonstrate specialised technical and theoretical knowledge of database implementation query and reporting. (10 credits) 3. Demonstrate specialised technical and theoretical knowledge 	

		<p>of and apply to the operation of database management systems in a range of application areas. (10 credits)</p> <ol style="list-style-type: none"> 4. Demonstrate specialised technical and theoretical knowledge of and apply performance monitoring and tuning to database systems. (10 credits) 5. Analyse, select and apply appropriate solutions to provide effective measures to ensure integrity and resilience enabling continuity of service including backup, recovery and security processes. (10 credits) 6. Demonstrate technical and theoretical knowledge of business intelligence tools and methods and apply in depth skills to extract value from the data within an organisation. (10 credits) 7. Demonstrate broad knowledge of the consequences of systems infrastructure and how they apply to support database operations. (10 credits) 8. Select and apply a range of technical and theoretical knowledge and skills to develop innovative database administration solutions in an organisation. (25-30 credits) 9. Analyse and generate solutions to familiar and unfamiliar problems by selecting and applying various methodologies of project management to an IT related project. (10 credits). 10. Select and apply a range of professional skills to analyse, plan, implement and document systems and processes, and demonstrate knowledge of the application of sustainable, socially responsible and ethical principles, and the implications of regulatory, privacy and security responsibilities relevant to database administration related roles, and the Treaty of Waitangi. (10-15 credits)
	<p>Education pathway</p>	<p>The qualification provides a pathway to specialist IS degree qualifications and higher level industry certifications.</p> <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> • NZ Diploma in Information Systems (level 5) • NZ Diploma in Information Technology (level 5) <p>Graduates may also be equipped to attempt industry vendor certifications, such as:</p> <ul style="list-style-type: none"> • Oracle DBA-CA - Oracle Database Administrator Certified Associate • MTA: Microsoft Technology Associate • MCSA - Microsoft Certified Solutions Associate • MCSE – Microsoft Certified Solutions Expert • MCDBA - Microsoft Certified Database Administrator
	<p>Employment pathway</p>	<p>Graduates of this diploma will have the skills and knowledge to work or gain employment in entry level database administrator roles.</p>

NZ Diploma in Information Systems (Level 6) (120 credits) (with strands in Business Analysis, User Experience, IT Project Management, Applied)

The NZ Diploma in Information Systems (with strands/endorsements in Business Analysis, User Experience, IT Project Management, and Applied IS) is intended to provide a general and more specialised options for the process-focused areas of the profession, such as those preparing for Business Analysis, Project Management and User Experience (UX) related roles.

This Diploma qualification is intended to provide a pathway from the NZ Diploma in Information Systems (Level 5), and focus on extending the knowledge and technical expertise along with the soft skills, to equip learners to specialise in a range of IS roles.

The chosen strands are intended to help address the need for specialised business analysts and IT project managers identified in the needs analysis and from industry feedback.

From a pathway perspective, learners might exit to industry in a range of IS roles dependent on the chosen specialisation, such as junior application administrators, IT project management or administration, process mapping, records management, junior business analyst or systems analyst, or a range of roles at the human computer interface such as user interface designer or tester, front end developer, HCI support or developer.

Qualification details

Title	New Zealand Diploma in Information Systems (with strands in Business Analysis, User Experience, IT Project Management, Applied)		
Version	1	Qualification type	Diploma
Level	6	Credits	120
NZSCED	0201	Information Technology	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm YYYY		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained sufficient Information Systems (IS) skills to enter into employment in an entry level IS role in a range of organisational contexts, or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners.</p> <p>We need this qualification because of a skill shortage and growing market for people who are experienced and qualified in information systems, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p> <p>Applied Strand:</p> <p>This strand of the qualification builds on the generalist skills developed at level 5 in the NZ Diploma in Information Systems, or equivalent prior experience, and graduates will be equipped with a range of Information Systems technical and theoretical</p>		

	<p>knowledge and skills with an applied general IS focus. Graduates will be capable of operating both independently and as part of a team, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>Business Analysis Strand:</p> <p>This strand of the qualification builds on the generalist skills developed at level 5 in the NZ Diploma in Information Systems, or equivalent prior experience, and graduates will be equipped with a range of Information Systems technical and theoretical knowledge and skills with a focus on Business Analysis. Graduates will be capable of operating both independently and as part of a team, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>User Experience Strand:</p> <p>This strand of the qualification builds on the generalist skills developed at level 5 in the NZ Diploma in Information Systems, or equivalent prior experience, and graduates will be equipped with a range of Information Systems technical and theoretical knowledge and skills with a focus on human computer interaction/user experience. Graduates will be capable of operating both independently and as part of a team, both globally and in New Zealand's multicultural and dynamic digital environment.</p> <p>IT Project Management Strand:</p> <p>This strand of the qualification builds on the generalist skills developed at level 5 in the NZ Diploma in Information Systems, or equivalent prior experience, and graduates will be equipped with a range of Information Systems technical and theoretical knowledge and skills with a focus on IT project management. Graduates will be capable of operating both independently and as part of a team, both globally and in New Zealand's multicultural and dynamic digital environment.</p>
Outcome Statement	<p>Graduate profile</p> <p>Graduates of this qualification will be able to:</p> <p>(Core for all IS strands – 90 credits)</p> <ol style="list-style-type: none"> 1. Demonstrate specialised technical and theoretical knowledge of and apply in depth skills in investigation, analysis, and review of business logic and processes. (15 credits) 2. Demonstrate technical and theoretical knowledge of business intelligence tools and methods and apply in depth skills to extract value from the data within an organisation. (15 credits) 3. Demonstrate specialised technical and theoretical knowledge of and apply in depth skills in human computer interaction and user interface design. (15 credits) 4. Demonstrate specialised technical and theoretical knowledge of and apply in depth skills in a systematic approach to the design, development, operation and maintenance of software systems. (10 credits) 5. Demonstrate specialised technical and theoretical knowledge of and apply in depth skills in database modeling and reporting. (10 credits) 6. Analyse and generate solutions to familiar and unfamiliar problems by selecting and applying various methodologies of project management to an IT related project. (10 credits) 7. Select and apply a range of professional skills to analyse, plan, implement and document systems and processes, and demonstrate knowledge of the application of sustainable,

		<p>socially responsible and ethical principles, and the implications of regulatory, privacy and security responsibilities relevant to Information Systems roles, and the Treaty of Waitangi. (15 credits)</p> <p>Strands (additional 30 credits)</p> <ol style="list-style-type: none"> 1. Applied Strand Select and apply a range of technical and theoretical knowledge and skills to develop innovative Information Systems solutions in an organisation or community context. (30 credits) 2. Business Analysis Strand: Evaluate and apply specialised technical and theoretical knowledge of and demonstrate leadership skills in the investigation, analysis, and review of business models and processes in an applied organisational setting. (30 credits) 3. User Experience Strand: Explore and apply the design, construction and evaluation of interactive technologies for use by individuals groups and organisations and the social implications of these systems; and examines the values implicit in design and development of technology. (30 credits) 4. IT Project Management Strand: Evaluate and apply specialised technical and theoretical knowledge of and demonstrate management skills in the planning, execution, monitoring and deployment of an IT related project in an applied organisational setting. (30 credits)
	<p>Education pathway</p>	<p>The qualification provides a pathway to a specialist IS degree qualifications and higher level industry certifications.</p> <p>The qualification provides a pathway for people wanting to broaden their skills and knowledge in IS and may include people working in the IT sector and school leavers, and other people wishing to enter it. This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> NZ Diploma in Information Systems (level 5) <p>Graduates may also be equipped to attempt industry vendor certifications such as:</p> <ul style="list-style-type: none"> Business Analysis – BA (NZIBA); MCSE – Microsoft Certified Solutions Expert: Business intelligence IT Project Management – PRINCE2; PMINZ User Experience - UX ?
	<p>Employment pathway</p>	<p>Applied Strand:</p> <p>Graduates of this diploma will have the skills and knowledge to work or gain employment in a range of IS roles such as process mapping, project administration, records management, junior application administrators; and possibly entry level Business Analyst, IT Project Management or Administrator roles, and other IS roles.</p> <p>Business Analysis Strand:</p> <p>Graduates of this diploma will have the skills and knowledge to work or gain employment in a range of IS roles. Graduates of the business analysis strand will also have the skills and knowledge to work or gain employment in roles such as Junior Business Analyst or Junior Systems Analyst.</p> <p>User Experience Strand:</p> <p>Graduates of this diploma will have the skills and knowledge to</p>

		<p>work or gain employment in a range of IS roles. Graduates of the User Experience strand will also have the skills and knowledge to work or gain employment in entry level roles such as user interface designer; user interface tester; front end developer; HCI support or developer.</p>
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IT Project Management Strand:

Graduates of this diploma will have the skills and knowledge to work or gain employment in a range of IS roles. Graduates of the IT Project Management strand will also have the skills and knowledge to work or gain employment in roles such as Junior/support for IT project management or IT project administrator.

NZ Diploma in Software Development (Level 6) (240 credits)

The Software Development pathway pursues core concepts and practice around the development of software in multiple contexts. Sector and industry feedback from consultation suggests that a longer Diploma is required to prepare learners for a software development pathway, and the proposed qualification is 240 credits (equivalent of 2 years full time).

The *NZ Diploma in Software Development* is intended to include the core content common across all IT qualifications, then fork into more in-depth software development theory and practice. The Diploma generalises the outcomes to enable a course to focus on one of several contexts such as (for example) general Application Development, Web Development, Games Development, Mobile Apps Development, or other areas that may emerge in future.

A stranded qualification is not being suggested – rather, the outcomes, skills and attributes might be identical for these contexts, just applied in a different manner, and a graduate may enter into employment in a junior developer or tester role in a range of organisational contexts, or proceed to further study.

Qualification details

Title	New Zealand Diploma in Software Development		
Version	1	Qualification type	Diploma
Level	6	Credits	240
NZSCED	0201	Information Technology – Computer Science	
DAS classification			
Qualification developer	TBC		
Next review	Mmmm 2016		
Approval date	Dd Mmmm YYYY		
Strategic purpose statement	<p>The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained sufficient IT knowledge, practices and technical skills in software development to enter into employment in a junior developer or tester role in a range of organisational contexts, where there is a requirement for fundamental coding, scripting, and testing skills and not a requirement for significant architecture and design; or to proceed to further study.</p> <p>The qualification is designed to meet the global training and education needs of a range of learners. The target market includes those who are seeking to focus on one of several contexts such as (for example) general Application Development, Web Development, Games Development, Mobile Apps Development, or other areas that may emerge in the future. Graduates will be capable of operating both independently and as part of a team under broad supervision, both globally and in New Zealand’s multicultural and dynamic digital environment.</p> <p>We need this qualification because of a skill shortage and growing market for software developers, and the rapidly emerging digitisation of all sectors of the economy and society, and opportunities created by ultrafast broadband and the New Zealand knowledge economy.</p>		

Outcome Statement	Graduate profile	<p>Graduates of this qualification will be able to:</p> <ol style="list-style-type: none"> 1. Write program using appropriate design patterns, data structures and algorithms. (60 credits) 2. Analyse, design and develop software solutions for broadly defined range of contexts and contribute to the design of systems, components/modules, or processes to meet specified needs and appropriate professional standards. (45 credits) 3. Apply an appropriate range of software quality assurance techniques to verify systems, components/modules, or processes. (30+ credits) 4. Apply appropriate data access and management technologies to application domain. (30+ credits) 5. Integrate security principles throughout software development phases to industry best practice. (15+ credits) 6. Choose, justify and apply appropriate architecture, technologies, methodologies tools and programming languages to implement the software solution. (15 credits) 7. Analyse and generate solutions to familiar and unfamiliar problems by selecting and applying various methodologies of project management to an IT related project. (10-15 credits) 8. Select and apply the fundamentals of computing concepts and practice. (15 credits) 9. Select and apply communication, information design, personal and interpersonal skills including teamwork, customer service, relationship and conflict management, and contemporary cultural issues relevant to Information Technology and software development in an organisational environment. (8-10 credits) 10. Select and apply professional and ethical principles in a socially responsible manner, and demonstrate knowledge of and appreciate the implications of managing and complying with legal, regulatory, privacy and security responsibilities relevant to Information Technology and software development, in an organisational environment. (7-10 credits)
	Education pathway	<p>Graduates of this qualification may progress to a computing degree, or specialised qualification such as, for example, software testing or software security.</p> <p>This qualification may also equip learners to meet the needs for 'optional' international vendor certificates. For example:</p> <ul style="list-style-type: none"> - Oracle's java - Microsoft certifications e.g. MCSD, MCSA SQL server, C# - Zend PHP qualifications - IBM e.g. Rational <p>This qualification provides an education pathway from:</p> <ul style="list-style-type: none"> - NCEA Level 2 or 3 with appropriate credits in mathematics and digital technologies subjects - Level 4 NZ Certificate in IT Essentials - Level 5 NZ Certificate in Information Technology - Appropriate international vendor certifications in software development
	Employment pathway	<p>Graduates of this qualification will have the skills and knowledge to be employed in a junior role in development or testing, in a range of organisational contexts. These roles may require fundamental coding, scripting, and testing skills, and are less likely to require significant architecture and design.</p>

Appendix A: Consultation Questions

The purpose of this [consultation](#) is to gather information and stakeholder feedback about the draft ICT qualifications so that they can be amended to best meet industry and learner needs before moving to the next stage of the development process.

Please visit <http://www.iitp.org.nz/quals/> to provide your response.

Consultation closes at 5pm on Monday 14th October 2013.

General

1. Please provide your contact details.

Name: Email: Employer: Position:

2. Please indicate the stakeholder group you most closely relate to:
 - a) IT Industry (including IT-related roles in non-IT companies and non-technical management roles in IT companies)
 - b) Polytechnic or Institute of Technology (ITP)
 - c) Private Training Establishment (PTE)
 - d) Wānanga
 - e) A secondary school or other educational organisation
 - f) Community group
 - g) Student/individual
 - h) Other (please specify)

The following questions are about specific qualifications, followed by your overall impressions. You may choose to provide feedback by responding to all or some of the questions.

*Unless otherwise stated, **Certificates** are 60 credits (6 month) qualifications and **Diplomas** are 120 credits (12 month) qualifications. See appendix for NZQF Level Descriptors table.*

Information Technology (practitioner) Qualifications

1. Referring to the draft qualifications document, how strongly do you agree or disagree that the following proposed qualifications adequately address the needs of the IT industry and learners?
 - a. NZ Certificate in Information Technology (Level 5)
 - b. NZ Diploma in Information Technology (Level 5)
 - c. NZ Diploma in Information Systems (Level 5)
 - d. NZ Diploma in Web Design and Development (Level 5)
 - e. NZ Certificate in Information Technology (Practitioner) (Level 6; 40 credits; 4 months)
 - f. NZ Diploma in Systems and Network Administration (Level 6)
 - g. NZ Diploma in Software Implementation and Support (Level 6)
 - h. NZ Diploma in Database Administration (Level 6)
 - i. NZ Diploma in Information Systems (Level 6) with specialist strands in Business Analysis, IT Project Management, User Experience or Applied IS
 - j. NZ Diploma in Software Development (Level 6; 240 credits; ~ two years)
2. What could be done to improve any or all of the above qualifications?
3. Please provide any further comments you have about these proposed qualifications.

Transition (bridging) Qualification

1. Referring to the draft qualifications document, how strongly do you agree or disagree that the following proposed qualification adequately address the needs of learners requiring a preparatory Certificate before pursuing further IT study?
 - a. NZ Certificate in IT Essentials (Level 4)
2. What could be done to improve the transition certificate to better meet the needs of a range of learners?

Computing (usage) Qualifications

1. Referring to the draft qualifications document, how strongly do you agree or disagree that the following proposed qualifications adequately address the needs of organisations and learners, and those going on to use computers and technology at work, home and society?
 - a. NZ Certificate in Computing (Fundamentals) (Level 2; 40 credits; ~ four months)
 - b. NZ Certificate in Computing (Level 3)
 - c. NZ Certificate in Computing (Advanced) (Level 4)
2. What could be done to improve any or all of the above qualifications?
3. How strongly do you agree or disagree that these qualifications have the right balance of technical user skills and tools primarily, as opposed to other 'soft' skills?
4. How strongly do you agree or disagree that the Level 3 NZ Certificate in Computing adequately prepares learners to proceed to either the level 4 NZ Certificate in Computing (Advanced), or to the IT career pathway and the level 4 NZ Certificate in IT Essentials?
5. How strongly do you agree or disagree that the title of these 'Computing' qualifications is appropriate?
6. Please provide any further comments you have about these proposed qualifications.

Overall impressions

1. How strongly do you agree or disagree that the proposed suite of ICT qualifications adequately addresses the needs of learners preparing for an IT related career or further study in Information Technology?
2. Do you support these qualifications being developed and made available in New Zealand?
3. Please provide any overall comments you have about the proposed suite of qualifications.
4. Please provide any further comments you would like to make about the IT Qualifications Review.

Thank you for taking the time to consider the [draft ICT qualifications consultation document](#), and [provide feedback](#) on the proposed suite of ICT qualifications to inform the review.

Please visit <http://www.iitp.org.nz/quals/> to provide your response

Appendix B: Principles for proposed qualifications design

In proposing the suite of ICT qualifications, the Steering Group suggests qualifications and a structure that as far as possible meet the needs of a wide range of learners, employers and other stakeholders. The approach is intended to be flexible for learner pathways and responds to:

- Issues identified in the analysis of current qualifications and their use
- Needs identified in the needs analysis
- The needs of specific groups of learners:
 - students wanting to gain a full ICT qualification prior to entering the workforce (domestic, international, secondary/tertiary, full time/part time, Māori, Pasifika);
 - employees wanting to gain a full ICT qualification i.e. those already in the workforce, who may be employer sponsored or part time self-funded learners;
 - people seeking employment who might need specific IT skills and/or to improve digital literacy, to enter an ICT or other business environment. May be second chance learners, up-skilling or re-training adults;
 - employers and SME owners wishing to improve productivity and profitability of their business (may be up-skilling themselves or employees, gap filling, mentored);
 - Communities wanting to reduce the technology literacy gap, providing opportunities to develop digital skills as a key aspect of life skills.
- Feedback from industry and provider surveys around roles and skill requirements
- Alignment and cohesion with the existing Digital Technologies NCEA Achievement Standards in schools
- Alignment with ongoing professional education in the industry
- Consideration of mapping IT professional qualifications to an international skills framework such as the Skills Framework for the Information Age - SFIA

The proposal includes qualifications that recognise generalist skills and knowledge relevant to many contexts, and also includes specialist areas to allow for separate credentialing in these areas. The proposal suggests two separate streams – ‘IT as a tool’ computing qualifications and ‘IT as a Profession’ information technology qualifications. There is also a proposal to develop a ‘bridging’ or transition qualification to enable people to gain skills to equip them for the more technical aspects required of the IT professional suite of qualifications.

Appendix C: NZQF Level Descriptor Table

The table below provides a detailed description of each level in terms of learning outcomes, using common domains and dimensions of progression. Knowledge, skills and application describe what a graduate at a particular level is expected to know, do and be. The term application encompasses responsibility, behaviours, attitudes, attributes and competence.

More information at:

<http://www.nzqa.govt.nz/studying-in-new-zealand/nzqf/understand-nz-quals/>

LVL	KNOWLEDGE	SKILLS	APPLICATION
1	Basic general and/or foundation knowledge	Apply basic solutions to simple problems Apply basic skills required to carry out simple tasks	Highly structured contexts Requiring some responsibility for own learning Interacting with others
2	Basic factual and/or operational knowledge of a field of work or study	Apply known solutions to familiar problems Apply standard processes relevant to the field of work or study	General supervision Requiring some responsibility for own learning and performance Collaborating with others
3	Some operational and theoretical knowledge in a field of work or study	Select and apply from a range of known solutions to familiar problems Apply a range of standard processes relevant to the field of work or study	Limited supervision Requiring major responsibility for own learning and performance Adapting own behaviour when interacting with others Contributing to group performance
4	Broad operational and theoretical knowledge in a field of work or study	Select and apply solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Self-management of learning and performance under broad guidance Some responsibility for performance of others
5	Broad operational or technical and theoretical knowledge within a specific field of work or study	Select and apply a range of solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Complete self-management of learning and performance within defined contexts Some responsibility for the management of learning and performance of others

LVL	KNOWLEDGE	SKILLS	APPLICATION
6	Specialised technical or theoretical knowledge with depth in a field of work or study	Analyse and generate solutions to familiar and unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study	Complete self-management of learning and performance within dynamic contexts Responsibility for leadership within dynamic contexts
7	Specialised technical or theoretical knowledge with depth in one or more fields of work or study	Analyse, generate solutions to unfamiliar and sometimes complex problems Select, adapt and apply a range of processes relevant to the field of work or study	Advanced generic skills and/or specialist knowledge and skills in a professional context or field of study
8	Advanced technical and/or theoretical knowledge in a discipline or practice, involving a critical understanding of the underpinning key principles	Analyse, generate solutions to complex and sometimes unpredictable problems Evaluate and apply a range of processes relevant to the field of work or study	Developing identification with a profession and/or discipline through application of advanced generic skills and/or specialist knowledge and skills Some responsibility for integrity of profession or discipline
9	Highly specialised knowledge, some of which is at the forefront of knowledge, and a critical awareness of issues in a field of study or practice	Develop and apply new skills and techniques to existing or emerging problems Mastery of the field of study or practice to an advanced level	Independent application of highly specialised knowledge and skills within a discipline or professional practice Some responsibility for leadership within the profession or discipline
10	Knowledge at the most advanced frontier of a field of study or professional practice	Critical reflection on existing knowledge or practice and the creation of new knowledge	Sustained commitment to the professional integrity and to the development of new ideas or practices at the forefront of discipline or professional practice

Diploma	Purpose	Outcomes
Level 5	A diploma at level 5 qualifies individuals with theoretical and/or technical knowledge and skills within a specific field of work or study.	A graduate of a level 5 diploma is able to: <ul style="list-style-type: none"> • demonstrate broad operational or technical and theoretical knowledge within a specific field of work or study • select and apply a range of solutions to familiar and sometimes unfamiliar problems • select and apply a range of standard and non-standard processes relevant to the field of work or study • demonstrate complete self-management of learning and performance within defined contexts • demonstrate some responsibility for the management of learning and performance of others
Level 6	A diploma at level 6 qualifies individuals with theoretical and/or technical knowledge and skills in specialised/strategic contexts.	A graduate of a level 6 diploma programme is able to: <ul style="list-style-type: none"> • demonstrate specialised technical or theoretical knowledge with depth in a field of work or study • analyse and generate solutions to familiar and unfamiliar problems • select and apply a range of standard and non-standard processes relevant to the field of work or study • demonstrate complete self-management of learning and performance within dynamic contexts • demonstrate responsibility for leadership within dynamic contexts.