

2019 Review of IT and Computing Qualifications

Working Group Background and Brief

August 2019

Prepared by NQS on behalf of ICT Steering Group

Contents

1. Background information	3
2. General and strategic considerations with current qualifications.....	4
3. Working groups - Strategic guidance from the steering group.....	5
General guidance for the working groups reviewing the qualifications	8
4. Resources and key documents.....	10
Appendices:	
Appendix A: Pathways Map - IT and Computing qualifications December 2018	11
Appendix B: IT & Computing Qualifications Review Schedule List – 2019.....	12
Appendix C: Information gathering and analysis	13
Appendix D: Summary of notes from the Consistency events Sept 2018 – July 2019.....	15
Appendix E: Stakeholder pre-review feedback on IT & Computing qualifications.....	17
Appendix F: Blank qualification template (May 2019).....	19
Appendix G: Core skills GPOs extracted from Level 6 IT qualifications (old & new)	21
Appendix H: Qualification Specifications extracted from IT qualifications	22
Appendix I: Strategic Purpose Statement and Graduate Profile Guidance.....	23
Appendix J: NZQF Qualification Types and Level Descriptor Tables	26
J.1 Qualification Types on the NZQF	26
J.2 NZQF Level descriptors.....	29

1. Background information

The suite of IT and Computing qualifications was listed on the NZQF in May 2015 and is scheduled for review by December 2019. The review excludes the two new qualifications (Cybersecurity and Software Testing) listed in November 2018. Appendix A provides a pathways map for the qualifications, and appendix B provides a list of the IT qualifications within the scope of this review (with links to the qualification documents).

The review will consider:

- the skills needs of industry and whether these have changed in the past five years to impact this qualifications review
- feedback to inform the review of the qualifications e.g. qualification usage and completion data, programme owners/providers (see appendix C), consistency reviews (see appendix D); employers/sector and other stakeholders feedback (appendix E)
- the alignment of the qualifications with the new rules/guidelines for reviewing qualifications, and the new qualification template (appendix F).

The guidelines for the review of NZ qualifications at Levels 1-6 on the NZQF is available from <https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/review-quals/>.

This review is being led by the qualification co-developers, IT Professionals NZ (ITPNZ) and NZQA National Qualifications Services (NQS). ITPNZ manage the Governance (steering group) and NQS the working groups and project management; and a contributory model will be applied to cover the costs.

The Steering Group has been established based on the representative membership included in the original review, chaired by IT Professionals NZ, and met on 5 August 2019. The Steering Group will address issues for the entire suite, provide overarching strategic guidance, and maintain an overview role. They will be asked to endorse the draft qualifications for consultation and for submission for quality assurance.

NQS will convene the working groups to review each stream, i.e. the certificates and/or diplomas in each discipline cluster. Four working groups are proposed – see section 3.

This brief has been created to assist the working groups to review the suite of IT and computing qualifications [Ref: [2591 – 2604](#)], in accordance with requirements to [list qualifications](#) on the New Zealand Qualifications Framework (NZQF).

This will involve considering the needs of the sector, feedback, and the new IT qualifications, and making any changes required to meet current listing requirements.

Some of the qualification specifications and conditions need to be consistent across the whole suite and the working groups won't be expected to focus on those parts, except where specific requirements for practical experience or other additional requirements are to be added.

The new cybersecurity and software testing qualifications listed in 2018 provide an indication of what will/won't be acceptable in the qualification documents for the entire suite.

At all significant stages, stakeholders will be kept informed and invited to contribute ideas, comment, feedback.

Information gathering and analysis

Feedback and data has been gathered and analysed to inform the review of the qualifications. This includes approved programmes and graduate data, consistency review feedback, along with feedback from programme owners/providers, employers/sector and other stakeholders.

- There are between 1 and 24 organisations (ITPs, PTEs and Wananga) with 142 programmes approved towards the fourteen IT Computing qualifications. It is noticeable that there are no schools yet with programmes approved or accreditation to deliver the new IT Computing qualifications. As yet there are no programmes for the new cybersecurity and software testing qualifications approved in November 2018 (but these are outside the scope of this review).
- There have been 4,402 graduates between 2016 and December 2018. The trend shows an increasing number of graduates each year for these qualifications, presumably as providers transition from expiring qualifications. For the 14 IT and computing qualifications, there were 160 graduates in 2016 increasing to 1,452 in 2017 and 2,790 in 2018.

2. General and strategic considerations with current qualifications

The Steering Group has the strategic oversight of the review and have asked all Working Groups to consider:

- mapping qualifications to workforce needs – whether any structural changes to the current suite were needed
- categories and specialisations of qualifications needed and whether this has changed (the pathways map – appendix A)
- how well the current landscape of IT and computing qualifications coherently delivers the above, and whether any changes are needed
- some quals have no/few graduates – are they needed? e.g. do we need database as a separate qualification [2602] or perhaps as a strand in Dip IS [2603] (no graduates)
- any suggestions to be considered from consistency events or feedback from stakeholders? (*summarised by qualification and general feedback - see appendix D & E*)
- ensuring the current qualifications still meet the strategic purpose and pathways identified
- the alignment of the qualifications with the new rules, notably the new template. This will include streamlining the consistency section and other general qualification information (*as per new IT quals*)
- any changes required to these qualifications to better align with good educational and employment pathways (*consistency events have suggested changes to pathways including inclusion of community pathways and more general employment job roles*)
- how well the graduate profile outcomes accurately capture what a graduate will know and be able to do (*consider consistency feedback and updated approach from newly listed quals – general approach is to simplify outcomes and reduce the number of conditions associated with each GPO*)
- consideration of soft skills and whether these continue to be explicitly expressed
- remove the glossary from the qualification, and perhaps create a qualification support resource
- consideration of whether the qualifications explicitly refer to new and emerging technologies, and set implicit/explicit expectations that these will be at least considered during programme development and delivery
- ensuring that the qualifications continue to maintain a product-agnostic and non-prescriptive approach in terms of tools, programming languages and environments
- A general update in language from “IT” and “ICT” to “Digital Technologies” where appropriate

3. Working groups - Strategic guidance from the steering group

The working group will be reviewing the suite of fourteen qualifications due for review this year – see appendix B. When reviewing the qualifications, the working group should consider any changes in the sector, the working group brief, strategic guidance from the Steering Group, and other resources and key documents.

The review process will involve checking to ensure the qualifications remain relevant, fit for purpose and meet the needs of the learners, industry and stakeholders. The qualifications should be written so anyone can understand, be relevant to many contexts; and use future proof language.

Four working groups have been assembled to review the qualifications

1. **Computing user** and IT essentials/transition
Levels 2-4 – qualifications 2591-2594
2. **IT Technical** - including technical support, networking, systems admin
Level 5 & 6 qualifications 2596, 2600, 2601; part 2595 & 2599; part Level 4 2594
3. **Information systems** – IS, UX, Projects, DBA
Level 5 & 6 qualifications 2597, 2602, 2603; part 2595 & 2599; part Level 4 2594
4. **Software development** & Web development and design
Level 5 & 6 2598, 2604; part 2595 & 2599; part Level 4 2594

The Steering Group met on 5 August 2019, and provide the following additional guidance to the four working groups:

Working group 1 - Computing user and IT essentials/transition

This working group will be reviewing four qualifications - the three qualifications at Levels 2 through 4 for the IT as a Tool suite, and the introduction to the IT Professional suite.

- NZ Certificate in Computing (User Fundamentals) (Level 2) [Ref 2591]
- NZ Certificate in Computing (Intermediate User) (Level 3) [Ref 2592]
- NZ Certificate in Computing (Advanced User) (Level 4) [Ref 2593]
- NZ Certificate in IT Essentials (Level 4) [Ref 2594]

The Steering Group have requested consideration of the following:

- how best to add 20 credits of learning to the Level 2 qualification – to increase it from 40 to 60 credits. It is envisaged this may be ‘soft skills’, and the working group is asked to develop any additional outcomes required (e.g. personal management, communications, problem solving, ethical use/behaviour). The Steering Group notes that the decision hasn’t been taken to move from 40 to 60 credits, however they would like to consult the industry and providers on the option and thus would like to show how a 60-credit qualification would differ from an updated 40-credit qualification.

- A brief review of the Level 3 and 4 Business Administration and Technology (BAT [2452](#) & [2461](#)) qualifications, draft new versions of which are currently out for consultation – see <https://www.nzqa.govt.nz/qualifications-standards/qualifications/business-qualifications/>.

The purpose of this review is:

- To ascertain whether the qualifications are similar enough that only one set of qualifications is required
- To consider whether any gaps that exist between the BAT and Computing qualifications might indicate a need for additional coverage within the Computing qualifications.
- Consideration and draft changes and development to meet the “general and strategic considerations” above.

Working group 2 - IT Technical - including technical support, networking, systems admin

This working group will be reviewing three ‘infrastructure’ qualifications at Levels 5 & 6:

- NZ Diploma in Information Technology Technical Support (Level 5) [Ref 2596]
- NZ Diploma in Networking (Level 6) [Ref 2600]
- NZ Diploma in Systems Administration (Level 6) [Ref 2601]

along with contributing to the review of the Level 4, 5 and 6 Certificates:

- NZ Certificate in IT Essentials (Level 4) [Ref 2594]
- NZ Certificate in Information Technology (Level 5) [Ref 2595]
- NZ Certificate in Information Technology Practitioner with strands in Server Administration, Network Administration, Information Technology Security, and Software Testing (Level 6) [Ref 2599 v2]

The Steering Group have requested consideration of the following:

- There has been discussion about whether 2600 and 2601 (Networking and SysAdmin) should be combined into a single new NZ Diploma of IT Infrastructure, considering the full infrastructure stack rather than just networking and sysadmin in a traditional sense.
- The Steering Group would like the expert working group to work up two options. Following consideration, both options will then be put out for consultation:
 1. Updated 2600 and 2601 (Networking and SysAdmin) qualifications taking the items below into consideration; and
 2. What a NZ Diploma in IT Infrastructure would include and look like. This would replace 2600 and 2601 incorporating networking and systems administration, and considering IT from an infrastructure perspective in a more contemporary manner (see below).

The Steering Group is also interested in the expert working group’s views on the pros and cons of each of these two approaches from a student outcomes perspective.

- 2600 Networking: whether as part of the above NZ Dip IT Infrastructure or as an updated ‘standalone’ qualification, the Steering Group envisions this qualification moving beyond the traditional networking/CISCO focus to ensure it reflects relevance for contemporary industry requirements, for example from both virtual and cloud perspectives. +This might also include infrastructure as code, data, agile, maybe recognising and managing the costs of using such environments etc.
- Understanding of Cloud Computing and the fundamentals that differentiate cloud computing from other approaches (e.g. the Cloud Computing Code of Practice definition: *“On-demand scalable resources such as networks, servers and applications which are*

provided as a service, are accessible by the end user and can be rapidly provisioned and released with minimal effort or service provider interaction.”)

- It is envisioned that the updated qualification (i.e. either 2600 or the new combined qualification) could be taught from a “virtual” infrastructure perspective featuring less traditional networking, and greater focus on cloud infrastructure and other related infrastructure areas.
- It is also envisioned that the Diploma of IT Infrastructure, and/or 2600 Networking, would incorporate a greater extent of automation and scripting, as well as basic data management/database from an infrastructure perspective.
- For all qualifications, consideration and draft changes and development to meet the “general and strategic considerations” above.

Working group 3 - Information systems – IS, UX, Projects, Database

This working group will be reviewing three information systems qualifications at Levels 5 & 6:

- New Zealand Diploma in Information Systems (Level 5) [Ref 2597]
- NZ Diploma in Database Administration (Level 6) [Ref 2602]
- NZ Diploma in Information Systems with strands in Business Analysis, User Experience, IT Project Management, and Information Systems Innovation (Level 6) [Ref 2603]

along with contributing to the review of the Level 4, 5 and 6 Certificates:

- NZ Certificate in IT Essentials (Level 4) [Ref 2594]
- NZ Certificate in Information Technology (Level 5) [Ref 2595]
- NZ Certificate in Information Technology Practitioner with strands in Server Administration, Network Administration, Information Technology Security, and Software Testing (Level 6) [Ref 2599 v2]

The Steering Group have requested consideration of the following:

- Noting there is a change in focus to the importance of data management (storing, indexing, types, data as a service). The ‘problems to solve’ include the core concepts of data integrity and principles regarding storing data, sovereignty, privacy, solving business needs.
- With no/low uptake of the 2602 Database qualifications, it is likely that this Diploma will be expired. The steering group would like the working group to consider a data strand in 2603 (Dip Info Sys) instead.
- Consideration and draft changes and development to meet the “general and strategic considerations” above.

Working group 4 - Software development & Web development and design

This working group will be reviewing two software and web development qualifications at Levels 5 & 6:

- New Zealand Diploma in Web Development and Design (Level 5) [Ref 2598]
- NZ Diploma in Software Development (Level 6) [Ref 2604] (240 credits)

along with contributing to the review of the Level 4, 5 and 6 Certificates:

- NZ Certificate in IT Essentials (Level 4) [Ref 2594]
- NZ Certificate in Information Technology (Level 5) [Ref 2595]

- NZ Certificate in Information Technology Practitioner with strands in Server Administration, Network Administration, Information Technology Security, and Software Testing (Level 6) [Ref 2599 v2]

The Steering Group have requested consideration of the following:

- Some provision has been using the 2598 qual to pathway into 2604, so please check adequate coding covered in 2598.
- web design related qualifications in the Creative Arts suite during this review – NZ Diploma in User Interface Design (Level 5) [Ref: 2644] and NZ Diploma in Web Design and Production [Ref 2645].

General guidance for the working groups reviewing the qualifications

The working groups will consider the strategic guidance from the Steering Group and specifics relevant to the qualifications the working group is reviewing (see section 2):

- review the existing qualifications purpose and outcome statement (see appendix I)
 - strategic purpose statement (why and what for);
 - outcome statement
 - education pathway (what the graduate will be ready to study next, and what qualification they may come from);
 - employment and community pathway (what graduate can be - check/confirm jobs equipped for; check for/add community pathways);
 - graduate profile (what graduate will be able to do, know, understand)
 - conditions relating to each graduate profile, and indicative credits
- review and develop qualification specifications and general conditions (see appendix H)
 - some specifications and conditions are consistent across the suite e.g. qualification award, consistency requirements, minimum standard of achievement.
 - General conditions for programme may also be standard or vary slightly – programme design, professional practice, practical experience requirements.
- Consider whether any changes are required to how the core skills are addressed, including the embedding of the Level 5 Certificates in the Level 5 diplomas, and core across Level 6 diplomas.

GPO conditions in the IT qualifications are generally too prescriptive and there is a trend to fewer conditions. The new Cybersecurity and Software testing qualifications provide an indication of reducing the conditions (see the changed L6 'core' outcomes in appendix G).

There is a need to maintain cohesiveness across the suite. For example, there are core skills included in the Level 5 and 6 Diploma qualifications, and consideration of how these are amended will impact all the qualifications at the particular level.

For level 6, there are 30 credits of **core skills** including 10 credits for each of:

- professional practice
- communications/interpersonal skills

- IT Project management & problem solving

The details of how these core skills have been included in the published Level 6 IT diploma qualifications are included as appendix G, which shows the outcome, associated conditions and indicative credits – original and amended in 2018 for the new IT qualifications.

There are also 15 credits of core skills (problem solving, interpersonal and communications skills) in the Level 6 NZ Certificate in Information Technology Practitioner which are common to each strand.

For Level 5, currently the 60 credit certificate is embedded within the diplomas, including a combination of core and technical skills that are expected of every IT graduate at this level.

Although the qualification template has been updated since these qualifications were published (appendix F), it may be useful to see the approach taken with the published Level 6 IT Diploma qualifications.

The underpinning premise of the mandatory reviews was to ensure that the proposed qualifications graduate profiles were sufficiently general and flexible enough to enable a range of programmes, in differing modes of delivery and contexts, to be developed, and still retain meaning for industry.

IT and computing is a rapidly changing and dynamic industry, and the working groups should use language that is generic enough to embrace emerging technologies. Where appropriate, this should allow providers to develop programmes towards qualifications that include vendor or industry certifications if they wish.

4. Resources and key documents

This document is intended to provide the key information for working groups to enable them to progress the review of the new qualification, along with the booklet of qualification documents. Information in the appendices includes:

- Appendix A: Pathways Map - IT and Computing qualifications December 2018.
To show the range of approved qualifications and how they fit in the suite
- Appendix B: IT and Computing qualifications Review Schedule List - 2019.
- Appendix C. Information gathering and analysis
- Appendix D: Summary of notes from the Consistency events Sept 2018 – July 2019
- Appendix E: Stakeholder pre-review feedback on IT and computing qualifications
- Appendix F: Blank qualification template (May 2019)
Different to the template version for the current qualifications
- Appendix G: Core skills GPOs extracted from Level 6 IT qualifications (old and new).
Shows different approach and will need to be consistent across the suite at the same level.
- Appendix H: Qualification specifications extracted from Level 6 IT qualifications (old and new).
Shows different approach and will need to be consistent across the suite at the same level.
- Appendix I: Strategic Purpose Statement and Graduate Profile Guidance. *For help when considering the wording of the qualification documents - strategic purpose statements (SPS), graduate profile outcomes (GPO), etc..*
- Appendix J: NZQF Qualification types & level descriptor tables

Additional information is available as follows:

- *Guidelines for review of NZ Qualifications at levels 1-6 for listing on the NZQF* can be accessed at <https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/review-quals/guidelines/>.
- Information on listing qualifications on the NZQF can be accessed at: <http://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/listing-qualifications-on-the-nzqf/>.
- *Guidelines for Approval of NZ Qualifications at levels 1-6 for listing on the NZQF* can be accessed at: <http://www.nzqa.govt.nz/assets/Studying-in-NZ/New-Zealand-Qualification-Framework/Guidelines-for-approval-of-New-Zealand-qualifications-at-levels-1-6.pdf>.
- The review webpage has background information and documents related to the current and past IT and computing qualifications reviews, including links to IT and computing qualifications approved in April 2015 and November 2018, standards that align to the Level 2 -4 qualifications and can be accessed at <https://www.nzqa.govt.nz/qualifications-standards/qualifications/it-computing-quals/>.

Appendix A: Pathways Map - IT and Computing qualifications December 2018

To show the range of approved qualifications within the scope of this review, and to assist with seeing where any new ones might fit in the suite.

Computing and IT Qualifications Pathways Map - with additions in 2018 (Cybersecurity and Software Testing)										
NZQF Level	IT as a Tool	IT as a profession								
1	General education review	1								
2	NZ Certificate in Computing (User Fundamentals) (40 credits) [Ref:2591]	2								
3	NZ Certificate in Computing (Intermediate User) (60 credits) [Ref:2592]	3								
4	NZ Certificate in Computing (Advanced User) (60 credits) [Ref:2593]	4	NZ Certificate in Information Technology Essentials (60 credits) [Ref:2594]							
5		5	NZ Certificate in Information Technology (60 credits) [Ref:2595]							
5		5	NZ Diploma in Information Technology Technical Support (120 credits) [Ref:2596]	NZ Diploma in Information Systems (120 credits) [Ref:2597]	NZ Diploma in Web Design & Development (120 credits) [Ref:2598]				Pathways from any of the Level 5 NZ Dip quals or Level 6 Ref: 2604	
6		6	NZ Diploma in Networking (120 credits) [Ref:2600]	NZ Diploma in Systems Administration (120 credits) [Ref:2601]	NZ Diploma in Database Administration (120 credits) [Ref:2602]	NZ Diploma in Info Systems (strands in Business Analysis, User experience, IT Project Management, and IS Innovation) (120 credits) [Ref:2603]	NZ Diploma in Software Development (240 credits) [Ref:2604]	NZ Certificate in Information Technology Practitioner (strands in Server Administration, Network Administration, IT Security, Software Testing) (40 credits) [Ref:2599 v2]	NZ Diploma in Cyber security (120 credits) [Ref: 3837]	NZ Diploma in Software Testing (120 credits) [Ref:3849]
Possible pathways.....			Bachelor Degrees (Level 7); Industry Certifications (Level 5, 6, 7)							

Appendix B: IT & Computing Qualifications Review Schedule List – 2019

The suite of 14 IT qualifications listed in April 2015			
Qual #	Qualification Title	Level	Credits
2591	NZ Certificate in Computing (User Fundamentals)	2	40
2592	NZ Certificate in Computing (Intermediate User)	3	60
2593	NZ Certificate in Computing (Advanced User)	4	60
2594	NZ Certificate in Information Technology Essentials	4	60
2595	NZ Certificate in Information Technology	5	60
2596	NZ Diploma in Information Technology Technical Support	5	120
2597	NZ Diploma in Information Systems	5	120
2598	NZ Diploma in Web Development and Design	5	120
2599 v1	NZ Certificate in Information Technology Practitioner (with strands in Server Administration, Network Administration, and Information Technology Security)	6	40
2600	NZ Diploma in Networking	6	120
2601	NZ Diploma in Systems Administration	6	120
2602	NZ Diploma in Database Administration	6	120
2603	NZ Diploma in Information Systems (with strands in Business Analysis, User Experience, IT Project Management, Information Systems Innovation)	6	120
2604	NZ Diploma in Software Development	6	240

Note: Reviewing 2599 v2 not 2599 v1 (a strand was added in November 2018)

Two new IT qualifications listed in November 2018 – excluded from the 2019 review			
Qual #	Qualification Title	Level	Credits
3837	NZ Diploma in Cybersecurity	6	120
3849	NZ Diploma in Software Testing	6	120
2599 v2	NZ Certificate in Information Technology Practitioner (with strands in Server Administration, Network Administration, and Information Technology Security, and Software Testing)	6	40

The review excludes the two new IT qualifications listed in November 2018, however it will include the review of version 2 of 2599 (which had a strand added in 2018).

As these qualifications were recently developed, they provide an example of what changes may look like in the suite being reviewed.

Appendix C: Information gathering and analysis

Feedback and data has been gathered and analysed to inform the review of the qualifications.

- Fourteen IT and computing qualifications co-developed by IT Professional NZ and NQS were listed in May 2015, and are being reviewed in 2019.
- Two additional IT qualifications were listed in November 2018, and are yet to have programmes approved, so excluded from this review and analysis - NZ Diploma in Cybersecurity (Level 6) (120 credits) [Ref 3837]; NZ Diploma in Software testing (Level 6) (120 credits) [Ref 3849].
- Consistency events for 11 of the fourteen IT and Computing qualifications have been scheduled between September 2018 and July 2019. Feedback from these events informs the 2019 review of the qualifications.

Qualification usage and completion data

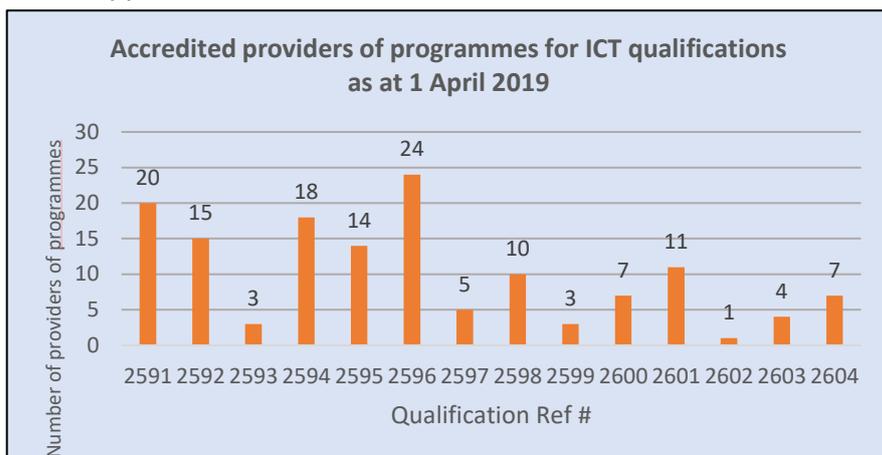
- Below is a summary of accredited providers of approved programmes, enrolment and graduate data 2016 – 2018.

IT and Computing Qualifications listed in May 2015 - being reviewed in 2019				
Qual #	Qualification Title	Programmes Approved	Enrolments 2016 - 2018	Graduates 2016 - 2018
2591	NZ Certificate in Computing (User Fundamentals) (Level 2) (40 credits)	20	3,055	1,247
2592	NZ Certificate in Computing (Intermediate User) (Level 3) (60 credits)	15	1,749	444
2593	NZ Certificate in Computing (Advanced User) (Level 4) (60 credits)	3	315	215
2594	NZ Certificate in Information Technology Essentials (Level 4) (60 credits)	18	1,084	609
2595	NZ Certificate in Information Technology (Level 5) (60 credits)	14	732	350
2596	NZ Diploma in Information Technology Technical Support (Level 5) (120 credits)	24	2,150	985
2597	NZ Diploma in Information Systems (Level 5) (120 credits)	5	46	6
2598	NZ Diploma in Web Development and Design (Level 5) (120 credits)	10	860	307
2599	NZ Certificate in Information Technology Practitioner (Level 6) (with strands in Server Administration, Network Administration, and Information Technology Security) (40 credits)	3	14	13
2600	NZ Diploma in Networking (Level 6) (120 credits)	7	103	22
2601	NZ Diploma in Systems Administration (Level 6) (120 credits)	11	277	118
2602	NZ Diploma in Database Administration (Level 6) (120 credits)	1	-	-
2603	NZ Diploma in Information Systems (Level 6) (with strands in Business Analysis, User Experience, IT Project Management, Information Systems Innovation) (120 credits)	4	17	-
2604	NZ Diploma in Software Development (Level 6) (240 credits)	7	533	86
	TOTAL for 14 IT and Computing qualifications	142	10,935	4,402

Providers:

- All 14 qualifications have programmes approved.

- There are between 1 and 24 organisations (ITPs, PTEs and Wananga) with programmes approved towards each of the fourteen IT Computing qualifications. It is noticeable that there are no schools or ITOs with programmes approved or accreditation to deliver the new IT Computing qualifications.



- The Level 5 Diploma in IT Technical Support has the most accredited providers (24) followed by the Level 2 Computing (20) and Level 4 IT Essentials certificates (18).
- The Level 6 Database Administration qualification has one programme approved, but there have been no enrolments. Check whether this qualification is still needed.

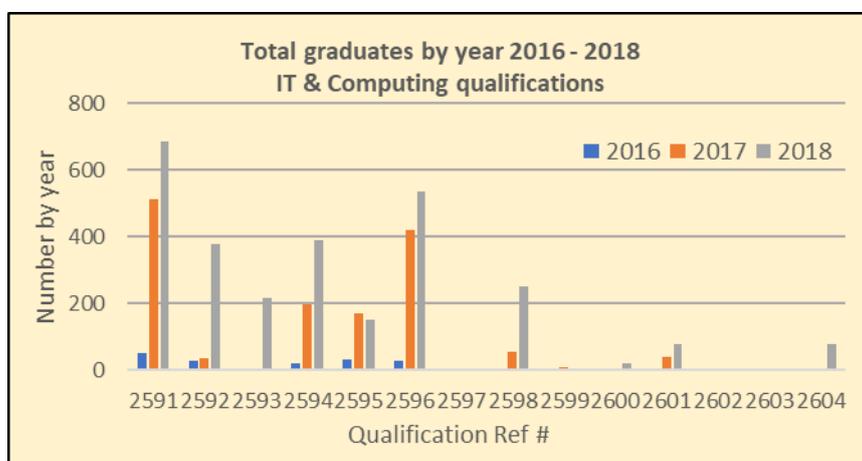
Graduates:

- For the 14 IT and computing qualifications, there were 160 graduates in 2016 increasing to 1,452 in 2017 and 2,790 in 2018.

Graduates by year	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	TOTAL
2016	50	28	-	21	31	30	-	-	-	-	-	-	-	-	160
2017	512	37	-	198	169	421	-	57	8	3	40	-	-	7	1,452
2018	685	379	215	390	150	534	6	250	5	19	78	-	-	79	2,790
TOTAL 2016 - 2018	1,247	444	215	609	350	985	6	307	13	22	118	-	-	86	4,402

Data source: TEC - Supplied from NZQA Quality Assurance Division (QAD).

- There are no graduates to the year ended December 2018 for two of the Level 6 IT qualifications – Database Administration [Ref: 2602] and Information Systems (with Strands) [Ref: 2603] (*the latter has had enrolments*).



- The trend shows an increasing number of graduates each year for twelve of these qualifications, presumably as providers transition from expiring qualifications. There were 160 graduates in 2016 increasing to 1,452 in 2017 and 2,790 in 2018.

Appendix D: Summary of notes from the Consistency events Sept 2018 – July 2019

Consistency events for eleven of the fourteen IT and Computing qualifications were scheduled between September 2018 and July 2019. Some general themes emerged from many of the consistency review events, and changes can be considered in the 2019 IT and computing qualifications review.

Key observations/recommendations from these events include:

- Generally providers and graduates seemed happy with the qualifications; major changes are not required (suggestion for Level 2 to change from 40 to 60 cr)
- For some quals, too many GPOs and conditions – combine/refine and merge conditions into GPO where possible. Diplomas embed ‘core’ GPOs.
- Graduates are more likely to have an education pathway than an employment pathway, and where graduates are employed, it is often in more general job roles not the specific IT roles identified in the qualification.
- Most quals should have a community pathway in addition to the employment pathway (graduates are ‘go to’ people in family/community/non-IT workplace) e.g. Computing L3 & 4, Web L5, IT technical support etc
- Whilst providers seemed happy with the current range, possibly consider a generic IT diploma qualification at Level 5 (mainly used as education pathway).

Qual Number	Qualification Title	Programmes	Consistency review date	Feedback on quals from consistency events
2591 Cfmd 6/12/18	NZ Certificate in Computing (User Fundamentals) (Level 2)	19	5/6 Sep-18 AKL-WLG	<ul style="list-style-type: none"> • All presenters really like the qual – clearly written. Conditions helped clarity. • Community pathway – change from <i>may</i> to <i>will</i>: ...will assist graduates in improving digital literacy and capability in society • Consider increasing from 40 to 60 credits (delivery model/funding related YG SAC) - to include soft skills – personal management, communications, problem solving (merge with FAB type approach?)
2592 Interim 16/7/19	NZ Certificate in Computing (Intermediate User)(Level 3)	16	29/30 April-19 AKL WLG	<ul style="list-style-type: none"> • Community pathway - intermediate level of digital literacy that enabled graduates to contribute in society • Graduates used their digital competency in a more diverse range of formal and informal contexts than stated in the qualification. These roles were often not IT-specific and they included paid and voluntary roles • educational pathways were also diverse. “The graduates were equipped with an intermediate level of digital literacy that enabled them to contribute in society where these capabilities were increasing in demand.”
2593	NZ Certificate in Computing (Advanced User) (Level 4)	4	30 July 2019 Te Awamutu	<ul style="list-style-type: none"> • Community pathway
2594 Cfmd 31/7/19	NZ Certificate in Information Technology Essentials (Level 4)	16	26-27 Nov-18 AKL WLG	<ul style="list-style-type: none"> • Mainly education pathway - part of pathway model into higher quals and degrees (mainly ITPs) • GPO6 Professional practice – lowest rated amongst graduates

2595 Interim 24/1/19	NZ Certificate in Information Technology (Level 5)	14	24 Oct-18 WLG	<ul style="list-style-type: none"> Primarily an exit qual or part of a pathway model into higher quals and degrees (mainly ITPs)
2596	NZ Diploma in Information Technology Technical Support (Level 5)	24	27-29 May-19 AKLx2, CHC	<ul style="list-style-type: none"> Support to keep this qual (most popular) – positive about the qual but suggestion to reduce the number of GPOs; and add a community pathway Some learners struggle with the soft skills and coding [<i>Note the Steering Group views these as essential components of this qualification</i>]
2598	NZ Diploma in Web Development and Design (Level 5)	10	1 May-19 WLG	<ul style="list-style-type: none"> Support to keep this qual – used mainly as an education pathway (to L6 Dip SD or degrees) Positive feedback on the qualification; suggestions for fewer GPOs Some concern – learners struggle with scripting, and internationals with soft skills (suggestion to strengthen scripting re progress to L6 & L7)
2599 Cfmd 10/10/18	NZ Certificate in IT Practitioner with strands in Server Administration, Network Administration, and Information Technology Security (Level 6)	2	Tue 4 Sep-18 AKL	<ul style="list-style-type: none"> Only 1 provider with graduates at review (and for only 2 strands NA & SA) Not clear it was being used for intended purpose i.e. retraining/upskilling existing IT practitioners
2600	NZ Diploma in Networking (Level 6)	7	17 Jun-19 WLG	<ul style="list-style-type: none"> Support to keep the qual but suggestions to reduce the # of GPOs and add in emerging areas – network automation and programmability Too detailed & CISCO 2020 changes may reflect what is redundant and/or can be phased out. Community pathway to be added.
2601 Interim 27/6/19	NZ Diploma in Systems Administration (Level 6)	10	25 March 19 AKL	<ul style="list-style-type: none"> Too many GPOs but preference to combine existing ones (not lose intent) e.g. 10-12 (L6 core) and 9 and 12 Explore inclusion of work based/practical experience
2604	NZ Diploma in Software Development (Level 6)	7	18 Jun-19 AKL	<ul style="list-style-type: none"> Support to keep this 240cr qual, and to embed L5 qual Positive feedback on the qual including the # and range of GPOs Some concern about GPO7 and embedding L5 Dips cleanly Okay to include at least 50% practical experience into conditions

The below qualifications were not scheduled for consistency review in 2018/2019 because there were no or too few graduates reported.

2597	New Zealand Diploma in Information Systems (Level 5)	5
2602	NZ Diploma in Database Administration (Level 6)	1
2603	NZ Diploma in Information Systems with strands in Business Analysis, User Experience, IT Project Management, and Information Systems Innovation (Level 6)	4

Appendix E: Stakeholder pre-review feedback on IT & Computing qualifications

Stakeholder pre-review feedback to inform the IT and computing qualifications 2019 review

<p>General feedback – all/any qual</p>	<ul style="list-style-type: none"> • The qualifications are well constructed on the whole, but could be adjusted a bit • make the qualifications a little less prescriptive because that allows more flexibility (fewer mandatory conditions) • Inclusion of cloud technologies – it is something that can be included in the current qualifications, but it would be good to have it explicitly mentioned. The reality is that the term is firmly established in industry, academia and elsewhere, so we should not keep trying to avoid it. • There should be a high practical and real-life component • Employers need applied skills and experience and require employees to hit the ground running • Good to combine professional certifications as a component of qual • AI, cybersecurity & data analytics has become very important since 2015 • Soft skills – communications, presentation skills, teamwork, problem solving, flexibility/adaptability • Cloud technologies and DevOps • IoT and mobile connectivity • Too specialised too early • Broader Diploma at Level 5; pathways into degrees • Developing analytical, evaluative and more problem-solving skills throughout • Growth in data science, CX, product management, UX and UI design, software development
<p>NZC in Computing (User Fundamentals) Level 2 (#2591)</p>	<ul style="list-style-type: none"> • No feedback – okay as is. • 60 credits to align with YG funding • More numeracy/literacy, and study skills • Allow more time for adult learners to improve Digital Literacy
<p>NZC in Computing (Intermediate User) Level 3 (#2592)</p>	<ul style="list-style-type: none"> • Virtual reality could be introduced at this level
<p>NZC in IT Essentials Level 4 (#2594)</p>	<ul style="list-style-type: none"> • The conditions for GPO 2 require the learner to create a simple database with queries, forms, reports, dropdown lists etc. Suggest that this is removed from Level 4 as creating a database is more suitable for learners at level 3. • The qualification is quite business focused. Suggest that perhaps you could amend GPO 2 to focus on emerging technologies, quantum computing, drones, virtual reality etc to shift the focus more toward information technology, which would provide a better pathway to L 5.
<p>NZ Diploma in IT Technical Support Level 5 (#2596)</p>	<ul style="list-style-type: none"> • It states at the bottom of page 4 in the Qualification Specifications that there are no mandatory prerequisites for this qualification. However a prior learning requirement is specified in the conditions in GPO 1, 2 and 3 - Application of the core information technology skills and knowledge underpinned in the first outcome of the New Zealand Certificate in Information Technology [Ref: 2595].

	<ul style="list-style-type: none"> • GPO 9 - <i>interaction design concepts and practice to enhance interface design (5 credits)</i>. This GPO should be worth at least 6 credits (and possibly 7) to accurately reflect the hours of learning required (2 weeks minimum, possibly longer) • GPO 10 - <i>software development to create simple working applications. (10 credits)</i>. This GPO should be worth a minimum of 13 credits (and possibly up to 15) to accurately reflect the hours of learning required (at least 4-5 weeks) • GPO 11 - <i>Apply professional, legal, and ethical principles and practices (7 credits)</i>. This subject matter is very important at every level and it is rightly covered in all IT qualifications. However, the depth of knowledge and understanding required by an IT professional in the workplace is the same at Level 4 as it is at higher levels and it would be really good if there was some way that the whole subject of ethics, professionalism, confidentiality, Treaty of Waitangi, compliance etc could become a required element of learning that sat alongside the IT qualifications so that the same content did not have to be repeated at each level. (An example of what we are trying to convey is the requirement in NCEA for the learner to have gained 10 literacy credits and 10 numeracy credits before NCEA can be awarded). • Remove web technologies • Students should be introduced to cloud service models and cloud deployment models for instance.
NZC in IT Practitioner Level 6 #2599	<ul style="list-style-type: none"> • No feedback – okay as is.
NZ Diploma in Networking Level 6 (#2600)	<ul style="list-style-type: none"> • L6 Networking (2600) is too specific in my view • Commonality between L6 Sys Admin and Networking – maybe one stranded qual? • consider ‘infrastructure as code’ technologies such as the AZURE ARM templates and JASON for automated instantiation, and the proper cloud use of spinning up virtual servers and destroying them as required. • also consider the basic accounting of cloud based environments – how to recognize and manage the costs of using such environments (given that cost management of cloud environments is becoming a factor for organisations)
NZ Diploma in Database Administration Level 6 (#2602)	<ul style="list-style-type: none"> • Information management is a more appealing title (and reflects industry) • Mostly moved to cloud or SysAdmin or InfoSys Analyst or overtaken by specialist data skills • Could become part of ‘core’ for all Level 6 Dips • Essential in SDLC • looking at the value of including elements / references / constraints imposed by GDPR; potential impacts of various homeland security legislations on cloud hosted database environments as a guide to determining what data should be hosted where for an organisation

Employment, Cultural, Community Pathway/ Ko ngā huarahi ā-mahi, ā-ahurea, ā-whānau, ā-hapū, ā-iwi, ā-hapori anō hoki

Qualification Specifications/ Ngā tauwhāititanga o te tohu

Qualification Award/ Te whakawhiwhinga o te tohu	
Evidence requirements for assuring consistency/ Ngā taunaki hei whakaū i te tauritenga	
Minimum standard of achievement and standards for grade endorsements/ Te pae o raro e tutuki ai, ngā paerewa hoki hei whakaatu i te taumata o te whakatutukinga	
Other requirements for the qualification (including regulatory body or legislative requirements)/ Kō ētahi atu here o te tohu (tae atu hoki ki ngā here ā-hinonga whakamarumarū, ki ngā here ā-ture rānei)	
General conditions for programme/ Ngā tikanga whānui o te hōtaka	

Conditions relating to the Graduate Profile /Ngā tikanga e hāngai ana ki nga hua o te tohu

Qualification outcomes/ Ngā hua	Credits/Ngā whiwhinga	Conditions/Ngā tikanga
1.		
2.		
3.		

Transition information/ He kōrero whakawhiti

Replacement information/ He kōrero mō te whakakapi	
Additional transition information/ Kō ētahi atu kōrero mō te whakakapi	

Appendix G: Core skills GPOs extracted from Level 6 IT qualifications (old & new)

The core skills (30 credits) are consistent across the suite so will need to be included in any new Diploma qualifications at the same level. Below extract from IT quals in 2015 and new ones in 2018.

There has been a trend towards fewer conditions in recently published qualifications.

Qualification outcomes (2015)	Conditions (original IT quals from 2015)
Behave with integrity as a responsible Information Technology professional, to contribute positively to society. Credits 10	Programmes must include: <ul style="list-style-type: none"> • Application of professional and ethical practice, including sustainability, equity, social and contemporary cultural issues, relevant to an IT organisational environment (e.g. Treaty of Waitangi and accessibility issues); • Organisational implications of managing and complying with legal and regulatory requirements (e.g. health and safety, contract management, licensing, privacy); observing security responsibilities and industry codes of practices, and codes of conduct (e.g. IITP) relevant to an organisational environment.
Apply communication, information design, personal and interpersonal skills, clearly and professionally to enhance working effectiveness, efficiency, and quality outcomes in an organisational environment. Credits 10	Programmes must include: <ul style="list-style-type: none"> • Information representation design for multiple situations e.g. data visualisation; technical writing - help documents, user instructions, specifications; • Personal and interpersonal skills including customer service, leadership, teamwork, negotiating, self-management, social and multicultural awareness, relationship and conflict management.
Apply project management tools and techniques to an IT related project, to analyse and solve problems. Credits 10	Programmes must include: <ul style="list-style-type: none"> • Critical thinking, business logic, organisational processes, innovation and enterprise skills; • Project planning, management and control – cost, risk, quality, stakeholder, change, configuration, contracts, and maintenance management.

Qualification outcomes (2018)	Conditions (new IT quals from 2018)
Behave with integrity as a responsible IT professional, in accordance with legal and organisational regulatory requirements, applying professional and ethical practices. Credits 10	
Apply communication, information design, teamwork, personal, and interpersonal skills, to enhance working effectiveness, efficiency, and quality outcomes in a variety of situations in an organisational environment. Credits 10	Programmes must include information representation design for a variety of situations such as data visualisation; technical writing - help documents, user instructions, specifications.
Apply project management tools and techniques, using knowledge of project planning, management and control, to an IT related project, to analyse and solve problems. Credits 10	Programmes must include critical thinking, business logic, organisational processes, innovation and enterprise skills.

Appendix H: Qualification Specifications extracted from IT qualifications

The qualification specifications are relatively consistent across the suite. The template 'boxes' for the qualification specifications have changed since the original and 2018 review, and some have been removed. A more abbreviated version of information is now included – see the new Cybersecurity qualification [3837] for how evidence requirements for qualification award, evidence requirements for assuring consistency, minimum standard of achievement, other requirements etc is handled.

The *General conditions for programme* section now replaces the conditions for programme structure, conditions for programme context, and other conditions sections from the 2015 template. This may include programme entry information where essential, as there is no longer a section for that information.

Below is an **extract from the Software testing qualification [3849]** listed November 2018.

General conditions for the programme

Programme design

Programmes should integrate the assessment of core skills (outcomes 7-9) with the technical skills (outcomes 1-6).

Programmes should implicitly foster attributes to assist uncovering system behaviour and detect anomalies.

Programmes must reflect quality practice and maintain currency with amendments to, and replacements of, relevant legislation, regulations, Australia/New Zealand standards (AS/NZS), and security responsibilities including cyber safety. (*Note: these are now included in other requirements*)

Programmes must reflect relevant codes of ethics and professional practice.

Programmes may be developed based on Māori principles and values and they may enable Wānanga to meet obligations under the Education Act (1989, section 162(4)(b)(iv)).

Diversity

To encourage diversity within the IT workforce, consideration should be given to bi-cultural, multicultural, and gender issues when designing programmes.

Professional practice

Professional practice must be an integral part of the programme and delivery. Professional practice includes the core 'soft skills' of communication, team work, interpersonal skills, and ethical principles and practices. It also includes the organisational implications of managing and complying with legal and regulatory requirements (e.g. health and safety, contract management, licensing, privacy); observing security responsibilities and industry codes of practices, and codes of conduct, relevant to an organisational environment.

Practical experience

Practical experience is essential and it is recommended that programmes include learners completing at least half of the study in real or realistic practical settings. A real or realistic practical setting may include workplaces, labs or other simulated environments, or table-top walk through exercises.

Glossary

Technical terms used in the qualification can be found at:

- IEEE - Institute of Electronic and Electrical Engineers Standard Glossary of Software Engineering Terminology IEEE Std 610.12-1990, available at <http://ieeexplore.ieee.org/document> or <http://ieee-standard-glossary-software-engineering-terminology>.
- ISTQB - International Software Testing Qualifications Board Glossary, available at <http://glossary.istqb.org/search> or <http://istqb-glossary-all-terms>.

Appendix I: Strategic Purpose Statement and Graduate Profile Guidance

An extract from the [Guidelines for approval of NZ qualifications at levels 1-6 for listing on the NZQF](#), and some additional guidance.

OUTCOME STATEMENT

Outcomes statements include a strategic purpose statement; graduate profile outcomes; education pathway; employment, cultural and community pathway.

Strategic Purpose Statement (SPS)

The strategic purpose statement reflects the need for the qualification and describes how it “earns its place on the NZQF.” It clearly states the qualification’s use and relevance to learners, industry and the communities.

It is structured as three statements that clearly identify the:

- target group of learners
- industry and/or community that will benefit from the qualification
- the standard at which the graduate will operate or a definition of the scope of practice. This would refer to any industry of professional standards, licensing or professional registration requirements where relevant.

The strategic purpose statement is reflected in the outcomes within the graduate profile.

An example from the Cybersecurity qualification [3837] approved late 2018 follows:

*The **purpose** of this qualification is to provide Aotearoa New Zealand with people who have attained internationally transferable industry-relevant knowledge and technical skills that will equip them to work in entry-level roles in the specialised field of cybersecurity, or to proceed to further study.*

*Businesses, organisations and communities **will benefit** from having cybersecurity professionals who have developed a security mindset and who are able to identify, mitigate and respond to cybersecurity risks and incidents, and help assure information and systems security, integrity and availability.*

*Graduates will be **capable of** operating within the applicable professional standards and practice, both independently and as part of a team.*

Graduate Profile Outcomes (GPOs)

A graduate profile:

- comprehensively describes what a person awarded the qualification must be able to collectively do, be and know
- considers the full range of capabilities and competencies the graduates will need. Such as:
Capabilities
 - personal e.g. take responsibility, remain calm under pressure
 - interpersonal e.g. work with senior staff effectively, contribute to the team
 - cognitive e.g. set and justify priorities, solve problems
 - role-specific e.g. technical skills
 - generic e.g. organise work and manage time, literacy and numeracyCompetencies
 - role-specific e.g. technical skills
 - generic e.g. organise work and manage time, literacy and numeracy

- is written so that each outcome statement in the graduate profile uses descriptors that are at the level of the qualification (e.g. the outcomes of a level 4 certificate must align with the definition and characteristics of a graduate of a level 4 certificate).

NOTE: The individual learning required to meet those outcomes will commonly comprise intermediate level *learning* outcomes building towards the higher level graduate outcomes. The intermediate learning outcomes will not be included in the graduate profile but will be included in the programme leading to the qualification.

- starts with the stem:

The graduate (of this qualification) will be able to:

- outcome statement must be written in the form of:

- active verb which illustrates the use of the outcome e.g. analyse, apply, plan, cost, communicate
- subject which describes what the graduate will be doing
- context reflects the conditions under which the graduate will perform the outcome

Example (ex 1809 Level 4 NZC Residential Property Management) –

Graduates of this qualification will be able to:

- *establish and maintain residential tenancies in accordance with New Zealand legislation for the residential property and/or community housing sector*
 - *operate with broad legal, operational, and theoretical knowledge of the property when undertaking work as a property manager*
 - *establish and maintain professional relationships with landlords, tenants, and related parties*
 - *professionally market, manage, and report on a residential property portfolio*
 - *manage maintenance of residential rental properties*
 - *support tenants in dealing with relevant agencies and amenity providers*
 - *resolve tenancy conflicts using third parties where appropriate*
- outcome statement must be able to be assessed directly or indirectly through evidence gathered
 - outcome statements each contribute to meeting the needs identified in the qualification strategic purpose statement. Where the qualification includes strands, specific outcomes for each strand must be clearly identified within the graduate profile.

Each outcome statement will be weighted with an indicative credit value that must add to the qualification credit value. Indicative credit values reflect the balance of capabilities and competencies in the graduate profile and give guidance to programme developers.

Specific conditions relating to the graduate profile outcomes.

- The GPO conditions are intended to 'unpack' the intent of the outcomes (*which are generally quite broadly written to allow delivery in a range of contexts*) and specify conditions that will assist programme developers with interpretation when designing programmes towards the qualifications.
- The conditions are there to provide clarity and lead to consistency across a range of programmes that may be developed. Some qualification developers have been moving to a 'guiding document' to further unpack the intent, and this is an option for this review. e.g glossary
- GPO conditions in the IT qualifications are generally too prescriptive and there is a trend to fewer conditions. The new Cybersecurity and Software testing qualifications provide an indication of reducing the conditions (see the changed L6 'core' outcomes in appendix D).

CONSIDER THE FOLLOWING TO REVIEW THE GRADUATE PROFILE

Read it as a whole – does it describe the role referred to in the strategic purpose statement? Does it map back to the identified needs? Has anything changed - does it reflect current and future workforce skill needs?

- Is it clear what the graduate will actually be able to do when they have completed the qualification?

Are the core activities (functions) they will undertake in their role clear? Are they described meaningfully without itemising each step?

- What skills will they need to use and knowledge will they need to apply and in what context?
- What role do they have in a team?
- What is the scope of their responsibility as a result of completing the qualification?
- What kinds of problems will they have to manage?
- What responsibility do they have for maintaining safety/the environment?
- To whom and what are they responsible for communicating?

Does the graduate profile allow for both current and likely future needs – is it forward looking?

Does the graduate profile provide a clear and flexible framework for designing a range of programmes to meet different learner and other needs?

Can the graduate profile be clearly attested to through learning, teaching and assessment activities, without being overly restrictive in scope?

Can the graduate profile realistically be achieved within the specified credit value?

Appendix J: NZQF Qualification Types and Level Descriptor Tables

The following tables are intended to provide an overview of the qualification types and levels on New Zealand Qualifications Framework (NZQF). More information is available at: Understanding New Zealand qualifications <http://www.nzqa.govt.nz/studying-in-new-zealand/understand-nz-quals/>.

J.1 Qualification Types on the NZQF

The NZQF has 10 levels, with level 1 being the least complex and level 10 the most complex.

Level	Certificate	Diploma	Degree
10			Doctoral Degree
9			Masters Degree
8	Postgraduate Certificate	Postgraduate Diploma	Bachelor Honours Degree
7	Graduate Certificate	Graduate Diploma Diploma	Bachelor's Degree
6	Certificate	Diploma	
5	Certificate	Diploma	
4	Certificate		
3	Certificate		
2	Certificate		
1	Certificate		

Certificates and Diplomas are defined by an agreed set of criteria, and the table below describes the types of qualifications listed on the NZQF at level 1 to 6.

Diploma	Purpose	Outcomes	Credit requirements	
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. 	This diploma is listed at level 6. It must contain 72 credits at level 6 and have at least 120 of all credits contributing to the qualification at level 5 or above.	
	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 	This diploma is listed at level 5. It must contain 72 credits at level 5 and have at least 120 of all credits contributing to the qualification at level 4 or above.	
Certificate	Purpose	Outcomes	Credit requirements	
	Level 6	A certificate at level 6 qualifies individuals with theoretical and/or technical knowledge and skills within an aspect(s) of a specialised/strategic context.	A graduate of a level 6 certificate is able to: <ul style="list-style-type: none"> demonstrate specialised technical or theoretical knowledge with depth within an aspect(s) of 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 	This certificate is listed at level 6 and must comprise a minimum of 40 credits at level 6 or above.
	Level 5	A certificate at level 5 qualifies individuals with theoretical and/or technical knowledge and skills within an aspect(s) of a specific field of work or study.	A graduate of a level 5 certificate is able to: <ul style="list-style-type: none"> demonstrate broad operational or technical and theoretical knowledge within an aspect(s) of 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. 	This certificate is listed at level 5 and must comprise a minimum of 40 credits at level 5 or above.

Certificate	Purpose	Outcomes	Credit requirements
Level 4	A certificate at level 4 qualifies individuals to work or study in broad or specialised field(s)/areas.	A graduate of a level 4 certificate is able to: <ul style="list-style-type: none"> • demonstrate 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 • apply a range of communication skills relevant to the field of work or study • demonstrate the self-management of learning and performance under broad guidance • demonstrate some responsibility for performance of others. 	This certificate is listed at level 4 and must comprise of a minimum of 40 credits at level 4 or above.
Level 3	A certificate at level 3 qualifies individuals with knowledge and skills for a specific role(s) within fields/areas of work and/or preparation for further study.	A graduate of a level 3 certificate is able to: <ul style="list-style-type: none"> • demonstrate some operational and theoretical knowledge in a field of work or study • select from and apply a range of known solutions to familiar problems • apply a range of standard processes relevant to the field of work or study • apply a range of communication skills relevant to the role in the field of work or study • apply literacy and numeracy skills relevant to the role in the field of work or study • work under limited supervision • require major responsibility for own learning and performance • adapt own behaviour when interacting with others • contribute to group performance. 	This certificate is listed at level 3 and must comprise of a minimum of 40 credits at level 3 or above.
Level 2	A certificate at level 2 qualifies individuals with introductory knowledge and skills for a field(s)/areas of work or study.	A graduate of a level 2 certificate is able to: <ul style="list-style-type: none"> • demonstrate 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 • apply literacy and numeracy skills relevant to the role in the field of work or study • work under general supervision • require some responsibility for own learning and performance • collaborate with others. 	This certificate is listed at level 2 and must comprise of a minimum of 40 credits at level 2 or above.
Level 1	A certificate at level 1 qualifies individuals with basic knowledge and skills for work, further learning and/or community involvement.	A graduate of a level 1 certificate is able to: <ul style="list-style-type: none"> • demonstrate basic general and/or foundation knowledge • apply basic skills required to carry out simple tasks • apply basic solutions to simple problems • apply literacy and numeracy skills for participation in everyday life • work in a highly structured context • require some responsibility for own learning • interact with others. 	This certificate is listed at level 1 and must comprise of a minimum of 40 credits at level 1 or above.

J.2 NZQF Level descriptors

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 after graduating at a particular level. The term application encompasses responsibility, behaviours, attitudes, attributes and competence.

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
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

LVL	KNOWLEDGE	SKILLS	APPLICATION
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

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