Working Group Brief – Phase 2

Mandatory Review of Information and Communication Technology (ICT) Qualifications

April 2014

Prepared by NQS on behalf of ICT Steering Group
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1. Introduction and key tasks for working groups

The ICT qualifications that were submitted for approval to develop now require further refinement in preparation for listing.

The working groups will progress the development of the draft qualifications submitted for approval to develop in November 2013. Some of the qualification specifications and conditions will be consistent across the whole suite and the working group won’t be expected to focus on those parts at this stage, but will expand on the work of the first phase.

In this stage of qualification development, the key tasks for the working groups are to:

- refine the draft qualifications - parts prepared by working groups last year, including strategic purpose statements, graduate profile outcomes, education and employment pathways
- add in some qualification specifications and conditions - particularly any entry requirements and specific conditions relating to the graduate profile outcomes.

The underpinning premise of the mandatory reviews is to ensure that the proposed qualifications graduate profiles are 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. ICT is a rapidly changing and dynamic industry, and 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 certifications if they wish.

2. Landscape – and range of qualifications each work group will be working on

Approval to develop was granted for the 14 ICT qualifications submitted.

<table>
<thead>
<tr>
<th>NZQF Level</th>
<th>IT as a Tool</th>
<th>IT as a profession</th>
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<tr>
<td>1</td>
<td>General education review</td>
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<tr>
<td>2</td>
<td>NZ Certificate in Computing (User Fundamentals) (40 credits)</td>
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<tr>
<td>3</td>
<td>NZ Certificate in Computing (Intermediate User) (60 credits)</td>
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<tr>
<td>6</td>
<td>NZ Diploma in Information Technology (120 credits)</td>
<td>NZ Diploma in Info Systems (120 credits)</td>
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<tr>
<td>7</td>
<td>NZ Cert/Dip in IT Security</td>
<td>NZ Diploma in Web Design &amp; Development (120 credits)</td>
</tr>
</tbody>
</table>

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

There have been a number of suggested changes to the draft qualifications, and further refinements are required in the next stage of development including some qualification title changes.
Work groups are being convened to further develop the draft qualifications in preparation for approval to list. The range of qualifications each work group will be working on follows.

2.1 Information Technology work group (3/4 April, 26/27 May 2014 – Auckland)

- NZ Diploma in Information Technology (*Technical Support*) (Level 5) (120 credits)
- NZ Diploma in Systems Administration and Networking (Level 6) (120 credits)
- NZ Diploma in Software Implementation and Support (Level 6) (120 credits)
- NZ Certificate in Information Technology (Level 5) (60 credits)
- NZ Certificate in Information Technology (Practitioner) (Level 6) (40 credits)
- *NZ Diploma in Database Administration (Level 6) (120 credits)* - review and feedback as dual pathway (drafted by and follow-up will be from Info Systems work group)

2.2 Computing and Transition work group (5/6 May 2014 – Wellington)

- NZ Certificate in Computing (User Fundamentals) (Level 2) (40 credits)
- NZ Certificate in Computing (Intermediate User) (Level 3) (60 credits)
- NZ Certificate in Computing (Advanced User) (Level 4) (60 credits)
- NZ Certificate in Information Technology (Level 4) (60 credits)
- *NZ Certificate in Information Technology (Level 5) (60 credits)* – review and feedback as pathway into this qualification (drafted by and follow-up will be from Info Tech work group)

2.3 Software Development and Web Development work group (7/8 May 2014 – Auckland)

- NZ Diploma in Software Development (Level 6) (240 credits)
- NZ Diploma in Web Design and Development (Level 5) (120 credits)
- *NZ Certificate in Information Technology (Level 5) (60 credits)* – review and feedback re scripting outcome, and as pathway from this qualification (drafted by and follow-up will be from Info Tech work group)
- ‘Core’ outcomes at level 5 and 6

2.4 Information Systems work group (8/9 May 2014 – Auckland)

- NZ Diploma in Information Systems (Level 5) (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 Database Administration (Level 6) (120 credits) - review and consider feedback from InfoTech WG as dual pathway (follow-up will be from Info Systems work group)
- *NZ Certificate in Information Technology (Level 5) (60 credits)* – review and feedback re core outcomes, and as pathway from this qualification (drafted by and follow-up will be from Info Tech work group) – and ‘Core’ outcomes at level 5 and 6 across the suite
- NZ Certificate in Information Technology (Practitioner) (Level 6) (40 credits) – possible database administration contextual endorsement (follow-up will be from Info Tech work group)

The qualifications that were submitted for approval to develop are available from the review webpage, along with a summary of the Steering Group responses to the key issues raised in the feedback from the stakeholder consultation last October.

The latest draft of the NZ Certificate in Information Technology (Level 5) is included as appendix D. It is the version following work group input in April, and has been included here as further input and refinement is expected from other workgroups, and it shows the changed wording approach in the strategic purpose statement.
3. Resources and key documents

This document is intended to provide the key information for working groups to enable them to progress the development of the qualifications.

Information in the appendices includes:

- Appendix A: Summary of feedback from evaluators – approval to develop. Prepared to show the key issues raised in the feedback that need to be considered in phase 2 of the qualification development.

- Appendix B: Extract from evaluator feedback document – approval to develop. Requirements at approval to list.

- Appendix C: 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. This was provided as part of the evaluator feedback for the review.

- Appendix D: NZ Certificate in Information Technology (Level 5) – DRAFT. This is the working version following the April 2014 Info Tech work group input. This is included as it is a pathway to and from most of the qualifications in the suite, and it shows the style changes in the SPS.

- Appendix E: Strands and optional endorsement - final paper. For consideration of contextual endorsements and strands.

- Appendix F: Mandatory deliverables

- Appendix G: NZQF Qualification types & level descriptors

Additional information is available as follows:


- The review webpage has background information and documents related to the ICT qualifications review, including the:
  - draft IT and computing qualifications submitted for approval to develop
  - final needs analysis, including the section on the strategic need for each qualification
  - original working group brief (July 2013)
  - summary of feedback to consultations

4. Guidance for working groups

The resources and key documents provide the main input to guide the working groups in the next phase of development.

The working groups will be expected to:

- further develop New Zealand qualifications, in accordance with the advice and working brief provided;
- provide feedback on the draft qualifications to the Steering Group;
- adjust the draft qualifications, following feedback, where appropriate;
- prepare the qualifications for Stage Two of the review: Application for Approval to List a Qualification.

The need for the qualifications have been established in the first stage, and the focus is now around refining the draft qualifications, and ensuring they are designed to purposefully respond to the identified and prioritised needs of relevant stakeholders.

Now that the qualifications have been approved for development, the review moves onto the ‘approval to list’ stage. At this second stage, there are two further KEQs.

KEQ L1. To what extent does the qualification(s) design match the specific, validly identified needs of stakeholders?

KEQ L2. How well does the qualification meet the overall requirements for listing on the NZQF?

The focus is about the qualification matching the specific needs of stakeholders, and the overall adequacy and readiness of the qualification design for delivering and meeting its Strategic purpose statement, graduate profile and outcomes; and being at a publishable standard.

Qualifications should be:

- Written so anyone can understand
- Relevant to many contexts
- Using future proof language (consider fast pace of change – rapid digitisation of all sectors)
- Flexible to enable
  - a range of programmes
  - different modes of delivery
  - different contexts
  - possible vendor certifications (don’t need to specify – programmes can do that)

The aim is to get the qualifications as ‘good as they can be’ and suitable for a range of programmes to be developed.

When refining the draft qualifications, work groups should consider the resources and key documents previously mentioned, particularly the feedback from evaluators (Appendix A& B), and the guidance on Strategic Purpose Statement and Graduate Profile Guidance (Appendix C).

The work groups will refine strategic purpose statements, graduate profile outcomes, pathways, and include some qualification specifications and conditions.
Strategic Purpose Statements

- SPS identifies why the qualification should be on the NZQF. It should include three key elements:
  - The learner group
  - Industry or community end users that benefit from the qualification (includes cultural and social aspirations)
  - Industry or professional standards or requirements that define the scope of practice for graduates

- Possible stems for re-writing the SPS:
  - The purpose of this qualification is to …
  - This qualification is designed for people who are experienced….
  - Graduates will be capable of …. 
  - X will benefit by ….

Consider the draft Info Tech qualifications for possible revised interpretation of SPS (see Appendix D)

Graduate profile outcomes

Describe what a graduate can

- DO KNOW UNDERSTAND
- BE – employment pathways (jobs equipped for…)
- BE – education pathways (from, and next steps)

- Drafts require refinement prior to listing – some sentences too long and congested, ‘demonstrate’ used a lot

- Refer to the summary of evaluator feedback for issues to be addressed (appendix A & B)

- E.g. of an acceptable GPO - Determine client requirements, prepare and present recommended solution to client

- Guidance in the listing document (p14-17) and appendix C re guidance on SPS & GPOs

Qualification specifications and conditions

The work groups will also add in some qualification specifications and conditions - particularly any entry requirements and specific conditions relating to the graduate profile outcomes.

- The 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 mandatory and/or optional conditions that will assist programme developers with interpretation when designing programmes towards the new qualifications.

- The conditions are there to provide clarity and lead to consistency across a range of programmes that may be developed.

- GPO conditions may be mandatory or optional; and conditions may refer to:
  - topics that must be covered (eg Q2303);
  - evidence that must be provided (eg Q2085)
  - requirements that must be applied (eg Q2302)
  - unit standards (eg Q1816)

Listed qualifications that demonstrate these conditions are included in brackets above (eg Q2303).

The draft NZ Certificate in Information Technology (Level 5) qualification (Appendix D) includes some draft entry requirements and examples of conditions related to outcomes.
Appendix A: Summary of feedback from evaluators – approval to develop

1. Overall comments
   - Refinement of strategic purpose statements (SPSs)
   - Further development and consideration of some graduate profile outcomes (GPOs)
   - Refinement of some of the education pathways (e.g. articulation with degrees at higher levels; Cert/Dip pathways, Computing to IT pro qualifications)
   - Further consideration of the title of L4 Cert in IT to reflect the bridging nature (Essentials, Preparatory, Preparative, Pre-professional)
   - Some reservations about the L5 Cert IT, including SPS, pathways - education and job roles
   - Consideration of restructuring the Practitioner (Level 6) qualification e.g. contextual endorsement
   - Ensure the GPOs reflect the SPS (e.g. relating to operating in NZ bicultural, multicultural and digital environment; professional standards)

2. SPSs
   - on the whole require refinement prior to listing
   - some sentences too long – break up into smaller sentences
   - ‘global and education needs’ – too generic to be meaningful
   - Revisit use of the term ‘global’ - may be better replaced by ‘broad’ – check intent
   - Remove ‘we need this qualification because…’
   - SPS should reflect the industry standards that apply to graduates
   - Prefer if ‘target market’ isn’t used – instead:
     - this qualification is suitable for people who/with.... Or
     - this qualification is designed for people who/with....
   - SPS should reflect the need but not include an explanation of what the need is
   - SPS should include three key elements:
     - The learner group
     - Industry or community end users
     - Industry or professional standards or requirements that define the scope of practice
   - Possible stems for re-writing the SPS are:
     - The purpose of this qualification is to ...
     - This qualification is designed for people who are experienced....
     - Graduates will be capable of ....
     - X will benefit by ....
   - Suggested new SPS stems in Info Tech qualifications for feedback as a result of the 3/4 April work group meeting. A consistent approach across the suite of qualifications will be required.

3. Graduate profile outcomes
   - on the whole require refinement prior to listing, and need to better reflect the SPS
   - some sentences too long and congested – some detail may be better in the GPO conditions
   - literacy, numeracy, digital literacy is not currently obvious or explicit – more important at lower levels and should be more overt
   - cognitive skills not evident in all qualifications – problem solving, communications, collaboration with others, abstract reasoning
• bicultural and multicultural not reflected in any of the outcomes – maybe include something in qualification specification and conditions
• ‘demonstrate’ used too much – can seem like an assessment rather than an outcome
• GPOs – ‘demonstrate’ may be more appropriate than ‘apply’ in Cert IT L5 for GPO#s 1,2,5,7,13
• E.g. of recommendation ex L5 Web qualification: 
  Determine client requirements, prepare and present recommended solution to client

4. Pathways
• Clarify mention of articulation with degree owners
• vendor certifications shouldn’t be mentioned unless agreement from vendor, and more appropriate in education pathway than conditions
• check mention of pathways to next qualifications – query re user qualifications into pro suite

5. Specific qualification feedback

Certificate in IT (Level 4)
• Title - Further consideration of title of L4 Cert in IT to reflect the bridging nature (Essentials, Preparatory, Preparative, Pre-professional, other?)
• SPS – clarify bridging nature (see extract from needs analysis - *The NZ Certificate in Information Technology (Level 4) 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.*
• Avoid the term ‘basic’ if possible
• Outcome 1 – rewrite ‘italic bits’ into topics rather than sub-outcomes, and they would be useful in the GPO conditions section
• Outcome 4 – ‘appropriate’ not seen as meaningful. Possibly *Communicate clearly and professionally in a range of contexts within the IT industry.*
• Absence of abstract reasoning and problem solving skills in the graduate profile outcomes

Certificate in IT (Level 5)
• Apparent marked leap in technical complexity between the Cert IT L5 and Dip IT at L5
• Intended to provide the foundational content for those wishing to practice within IT profession
• Concern re ‘work ready graduates’ and ‘preparing to practice’ - unclear how this is significantly different to the purpose of the L4 Cert IT (re preparing graduates with the essential skills for further study which will equip them to work in the field of IT as a profession)
• GPOs – ‘demonstrate’ may be more appropriate than ‘apply’ in GPO#s 1,2,5,7,13

Diploma in Web Design and Development (Level 5)
• Accepted that graduates of the web design qualifications from the Creative Arts review will be quite different from those from the ICT review, where the key focus is on the programming side.
• Suggested wording change – *Determine client requirements, prepare and present recommended solution to client.*
• Absence of abstract reasoning and problem solving skills in the graduate profile outcomes
• Query re pathways ex L3 Cert Computing (intermediate user) appropriate
Diploma in Systems Administration and Networking (Level 6)

- GPO #11 recommendation - Demonstrate a practical knowledge of scripting and apply the principles of correct design, development and implementation of simple applications (10 credits)
- #9 – too much info to be read easily

Certificate in IT Practitioner (Level 6)

- Recommends contextual endorsement – skills knowledge and abilities inherent in the outcomes in the GP can be gained in one of a number of contexts in which the qualification can be awarded

SPS

- Appears to be on-going refresher course/professional development
- Conditional approval – qualification must be developed so as not to be designed for learners to repeat the same qualification more than once
- Recommends contextual endorsements

GPOs

- GPOs too open ended – unclear what graduate will know, be and do and in what scope or context
- #1 – maybe state/refer to abstract cognitive abilities and or problem solving?
- #2 – need to better define what ‘operate’ involves the graduate being able to do and in what context/specialised area
- #3 – evaluate not considered appropriate in this outcome; maybe try ‘explain’ or ‘analyse’

Diploma in Information Systems (with strands) (Level 6)

- Query as to whether they are strands or contextual endorsements. Strands represent a significant area of study or specialisation above and beyond the core; contextual endorsements recognise the context within which the graduate profile can be demonstrated
- Evaluator feedback re strands, consider: This qualification is stranded in order to recognise the specific skills and knowledge required for junior business analysts/system analysts; user experience/interface designers, user testers, front-end developers and HCI support or developers; junior support for IT project managers or IT project administrators; or process mapping, project administration, records management, junior systems analysts/architects, and other IS administrator roles.

Diploma in Software Development (Level 6)

- Outcome 2 refers to ‘appropriate professional standards’ and recommended to include this in the SPS
- Clarify outcomes from Cert L5 into this qualification; and consider if there is a level 6 ‘core’ across the suite. If pulling outcomes directly across, can’t alter the credit value (30 down to 15 credits) – will need to reword the outcome

Refinements required prior to submitting qualifications for approval to list.

Appendix C – Strategic purpose statement and graduate profile guidance may also be helpful.
Appendix B: Extract from evaluator feedback document – Approval to develop

Requirements

At approval to list, please:

1. Consider amending the title of the Certificate in IT proposed for Level 4, so that it reflects the fact that this is a preparatory qualification, bridging the ‘IT user’ and ‘IT professionals’ sectors.

SPS:

2. Consider breaking-up some of the paragraphs in the SPS of the proposed qualifications (e.g. Diploma in Software Development) in to smaller sentences.

3. Remove or re-write the third paragraph in the SPS of several of the qualifications proposed, starting with ‘we need this qualification because...’

4. Consider avoiding, if at all possible, use of the terms ‘entry-level’ and ‘basic’ in the SPS of the Certificate in IT proposed for Level 4.

5. Consider making it more clear in the SPS of the Certificate in IT proposed for Level 4, that it is a bridging qualification.

6. Clarify how a graduate of the Level 5 Certificate in IT can be both ‘preparing to practice’, and ‘work-ready’?

7. Please consider revising the SPS to reflect the industry standards that apply to graduates of the Diploma in Software Development.

8. Clarify if graduates of the Certificate in IT (Level 5) will gain credit towards (or advanced standing into) the diplomas that build-upon them at the same Level, and if so would this be as much as 60 credits – or half of the diploma.

9. Consider using text like ‘this qualification is suitable for people who/with’ or ‘this qualification is designed for people who/with...’ in the second paragraph of the SPS for the Diploma in IT (Level 5), instead of referring to the target market.

10. Consider the suggestion that the Level 6 Certificate in IT (Practitioner) (40 credits) be designed so that skills, knowledge and abilities inherent in the outcomes in the graduate profile can be gained in one of a number of contexts in which the qualification can be awarded (this is referred to as ‘contextual endorsements’).

11. Consider restructuring the design of the Diploma in IS (Level 6) with strands, so that skills, knowledge and abilities inherent in the outcomes in the graduate profile can be gained in one of a number of contexts in which the qualification can be awarded (this is referred to as ‘contextual endorsements’), rather than in strands as is currently proposed. If strands are retained, please consider if possible, using one paragraph to explain why the strands are necessary, as per the example provided above.

Graduate outcome statements:

12. Give consideration to whether in the graduate outcome statements in some qualifications (and perhaps this applies most to those at lower levels) it is clear what literacy, numeracy and digital literacy is expected of graduates of these qualifications.

13. Give consideration to comments above with regard to communications/interpersonal skills (soft skills), customer service and sales skills in the graduate profile outcomes of the Level 3 ‘IT as a Tool’ qualifications.
14. Give consideration to comments above with regard to the absence of abstract reasoning and problem solving skills in the graduate profile outcomes of the Level 5 Diploma in Web Design and Development, and other qualifications (e.g. those at Level 4).

15. Please revisit the use of the term ‘global; in the proposed qualifications.

16. Ensure that the outcomes in the graduate profile of the Level 2 to Level 5 qualifications reflect the SPS (e.g. relating to operating in New Zealand’s bicultural, multicultural and digital environment)

17. Remove the sub-outcomes included in italics in the draft version of the Certificate in IT (Level 4), re-write these and consider including them in the ‘conditions’ against outcome 1 in the Specific conditions relating to the Graduate profile section. Please also consider the comment regarding outcome 4.

18. Consider replacing the word ‘demonstrate’ with ‘apply’ in the outcomes 1, 2 5, 7 and 13, in the Diploma in IT (Level 5); and in other qualifications in the suite where the same issue arises (e.g. Level 6 Diploma in Systems Administration and Networking).

19. Revise the outcomes in the Level 6 Certificate in IT (Practitioner) in line with the comments made above e.g. focus in outcomes 1 and 2 on defining what a graduate will know, Be, or be able to do; and consider replacing ‘Evaluate’ in the 3rd outcome with ‘explain’, ‘analyse’, or another more appropriate word. And consider a contextual endorsement approach as opposed to adding strands and/or optional endorsements.

20. Consider removing outcome 8 from the Level 6 Diploma in Software Development, or significantly revising it, so that it does not duplicate the Certificate in IT (Level 5).

21. Consider revising Outcomes 9 and 10 of the Software Development diploma to avoid repeating similar content in the outcomes of the Certificate and Diploma in IT at Level 5; and consider breaking outcome 10 up into two or more outcomes.

22. Consider revising outcome 10 in the Diploma in Software Implementation and Support (Level 6). Consideration might include breaking the paragraph-up into a number of short sentences; or alternatively splitting it into two or three separate outcomes.

Education pathway
23. Consider and address where possible the comments made in relation to the education pathways above.

Other conditions
24. Ensure that if information is included in the Diploma in Software Development about which vendor qualifications graduates may also meet the requirements for, the respective owners of the vendor credentials have agreed to this; and move mention of this to the education pathway section.
Appendix C: Strategic Purpose Statement and Graduate Profile Guidance

STRATEGIC PURPOSE STATEMENT AND GRADUATE PROFILE

Strategic Purpose Statement
The strategic purpose statement reflects the need for the qualification and describes how it “earns its place on the NZQF.”

Includes three key elements:

- The learner group, where this is defined
- Industry or community end users including cultural and social aspirations – where these are reflected in the Needs Analysis
- Industry or professional standards or requirements that define the scope of practice

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

Graduate Profile
A graduate profile must (be):

- Comprehensive, describing what a person with this qualification must be able to do, know and be – it describes a whole role or set of capabilities and enables programme design that can be made available to a wide range of learners
- Sufficiently open to accommodate current and future needs, including technological shifts – stability and flexibility
- Balanced appropriately between knowing, being and doing for the level, qualification type and strategic purpose
- Consider the full range of capabilities the graduate may need:
  - 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 numeracy
- Start with the stem:
  - The graduate (of this qualification) will be able to:
- Use plain English to present a complete and easily understood picture for all stakeholders including learners
- Written so that each statement uses descriptors that reflect the level of the qualification and contain:
  - Verb e.g. Analyse, apply, plan, cost, communicate
  - Subject
  - Context
- Each statement in the profile will be weighted with an indicative credit value allocation that reflect the balance of capabilities
- Able to be assessed directly or indirectly through evidence gathered
- Individually contribute to meeting the needs identified in the strategic purpose statement
- Incorporate any industry or professional standards, licensing or professional registration requirements, or critical practice/employment elements.

This way we are moving away from ‘education-speak’ as our industry love to put it – to clearly stating what it is the graduate will ‘do, be and know’ – but in broader terms.

Use 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 Needs Analysis?

- 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?
### Qualification details

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### Strategic purpose statement

1. **ID target learner group**
2. **Industry or community that will benefit from the qual**
3. **The standard at which the graduate will operate**

The purpose of this qualification is to provide New Zealand businesses, organisations and communities with graduates who have attained the core concepts, practical and professional skills in Information Technology.

This qualification is designed to be the common core for all of the pathways in the IT suite of qualifications. It will primarily equip people for further IT related study, although it may also prepare people for employment in entry level IT roles. It builds on the learners existing IT skills from previous qualifications, or relevant experience.

Graduates will be able to demonstrate awareness of appropriate professional practice independently and as part of a team under broad supervision. This will apply in New Zealand’s bicultural, diverse and rapidly changing digital environment, and be internationally relevant.

Businesses, organisations and communities will benefit by having IT Professionals who have a sound base understanding of both the technical and professional aspects of the IT profession, in the rapidly emerging digitisation of all sectors of the economy and society.

### Graduate profile

**Do – Know – Understand**
- flexible/accommodate diff contexts
- balanced between knowing and doing
- Capabilities: personal, interpersonal, cognitive, technical skills, generic
- credit value
- incorporate industry or

Graduates of this qualification will be able to:

1. Select and apply the fundamentals of current and emerging computing concepts and practice. (30 credits)
2. Demonstrate a practical knowledge of scripting 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.
### Education pathway

*Be – from and next steps*

This qualification provides a pathway to the range of ‘IT as a Profession’ qualifications. This may include:

- NZ Diploma in Information Technology (Technical Support) (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)

Other possible pathways include under-graduate degree qualifications. This qualification may also equip learners to attempt ‘optional’ internationally recognised industry certifications at the appropriate level, as a starting point for a career in IT.

This qualification provides an education pathway from:

- NCEA Level 2 or 3, with appropriate credits in mathematics and digital technologies subjects
- NZ Certificate in Computing (Intermediate User) (Level 3)
- NZ Certificate in Computing (Advanced User) (Level 4)
- NZ Certificate in Information Technology (Level 4)

### Employment pathway

*Be – jobs equipped for; any community pathways*

Graduates of this qualification will have the skills and knowledge to work in the IT industry in a range of entry level support roles.

### Qualification specifications

<table>
<thead>
<tr>
<th>Qualification award</th>
<th>WORKING CONTENT FOR REFINEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrangements for managing consistency</td>
<td></td>
</tr>
<tr>
<td>Credit transfer and recognition of prior learning arrangements</td>
<td></td>
</tr>
<tr>
<td>Minimum standard of achievement and standards for grade endorsements</td>
<td></td>
</tr>
<tr>
<td>Entry requirements (including prerequisites to meet regulatory body or legislative requirements)</td>
<td>There are no mandatory prerequisites for this qualification. Learners must have an appropriate level of English proficiency for the level at which they intend to study. Details of English language entry requirements are contained in the NZQF Programme Approval and Accreditation Rules 2013 (Appendix 2). E.g. IELTS Academic score of 5.5, with no band score lower than 5; NZ Certificate in English Language (Academic) (Level 4). Learners enrolling are expected to hold appropriate digital technology achievement standards, NZ Certificate in Information Technology (Level 4), or equivalent knowledge,</td>
</tr>
</tbody>
</table>

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**ICT phase 2 WG meeting brief 2014.docx**
### Qualification conditions

**Overarching conditions relating to the qualification**

<table>
<thead>
<tr>
<th>Conditions for programme structure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions for programme context</td>
<td></td>
</tr>
<tr>
<td>Other conditions</td>
<td>The scope of the qualification outcomes matches requirements for IT support roles at tier 1</td>
</tr>
</tbody>
</table>

### Specific conditions relating to the Graduate profile

<table>
<thead>
<tr>
<th>Qualification outcomes</th>
<th>Indicative Credits</th>
<th>Conditions e.g. topics, evidence, requirements to be applied</th>
<th>Mandatory or Optional</th>
</tr>
</thead>
</table>
| 1 Select and apply the fundamentals of computing concepts and practice. | 30 credits | Programmes and assessment must include:  
- Organisational context and impact of IT on Business  
- Installation and configuring PCs, laptops, mobile and other devices, foundation networking  
- Configuring operating systems, email, diagnostic testing, maintenance, technical and customer support  
- Demonstrated advanced knowledge of applications for supporting user requirements  
- Configuring software applications for user requirements including advanced features of productivity tools and customer service | Mandatory |
| 2 Demonstrate knowledge of and apply the principles of correct design, development and implementation of simple applications. *Recommend SD WG refine this for the whole suite* | 10 credits | Programmes must include:  
- Programming concepts  
  - create a function; implement If Else statement, loop variables, algorithms;  
  - basic programming constructs and principles;  
  - what code looks like, how it behaves, and how it is written;  
  - syntax, logic, text editors, compiling, IDEs, syntax & logic errors, debugging)  
- Software Engineering | Mandatory  

**Note:** Simple scripting is an appropriate approach for system admin. students
<table>
<thead>
<tr>
<th></th>
<th>Select and apply problem-solving, and decision-making techniques relevant to Information Technology in an organisational environment.</th>
<th>5 credits</th>
<th>Programmes must include essential and contextualised logical and mathematical concepts such as:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select and apply communication, personal and interpersonal skills relevant to Information Technology in a range of contexts in an organisational environment.</td>
<td>8 credits</td>
<td>Programmes must/may include:</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>TBC re mix of mandatory and optional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select and apply professional and ethical principles relevant to Information Technology in a socially responsible manner within an organisational environment.</td>
<td>7 credits</td>
<td>Programmes must include:</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Mandatory</td>
<td></td>
</tr>
</tbody>
</table>

**Transition information**

<table>
<thead>
<tr>
<th>Replacement information</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Write any additional transition information here or delete the row)</td>
</tr>
</tbody>
</table>
Appendix E: Strands and optional endorsements

Requirements for Strands and Optional or Contextual Endorsements

Purpose

This document outlines the approach to be taken when strands, optional endorsements or contextual endorsements are included within a New Zealand qualification. The document should be read in conjunction with the Guidelines for approval of qualifications at levels 1-6 on the New Zealand Qualifications Framework.

Rationale

A New Zealand qualification will be listed with strands, optional endorsements or contextual endorsements where there is an identified need and all listing requirements have been met.

Optional endorsements in New Zealand qualifications will be considered when a stranded qualification structure will not be suitable. Optional and contextual endorsements are considered to be exceptions and therefore a clear justification for their inclusion must be provided. This justification must be supported by evidence not only for the need for the qualification but also the proposed structure.

Definitions

‘base qualification’ describes a qualification with or without strands that has an optional endorsement.

‘strand’ describes a major or significant area of study or specialisation, one of which must be chosen by all candidates.

‘optional endorsement’ describes a significant area of study or specialisation that only some candidates may require.

‘contextual endorsement’ describes recognition of the context within which the graduate profile has been demonstrated. Contextual endorsement is only available when recognising the context in which the profile was achieved is of importance to the industry and clear parameters for the context are specified.

Principles

Strategic and needs based

The usefulness, relevance and value of the qualification (including any strands or optional endorsements) is based on its relationship to the needs of learners, employers, industry and communities. These needs must be readily demonstrated.

Focused on outcomes

Clear specification of outcomes makes the purpose of the qualification transparent, enables comparisons with other qualifications (both nationally and internationally) and increases portability of the qualification.

Clear outcomes make the pathways for graduates to further education, employment and/or a contribution to their community, more explicit.
Evaluative quality assurance emphasises the achievement of outcomes relevant to the needs and aspirations of significant stakeholders, particularly learners. NZQA uses an evaluative approach in the quality assurance of qualifications and programmes.

**Flexibility**

The qualification is achievable in different contexts.

A range of programmes of training or study can lead to the qualification and allow achievement of the qualification in ways most suited to learners’ educational, work or cultural needs and aspirations.

**Interpretation**

1. The specific outcomes for strands and optional endorsements must be consistent with the main disciplinary emphasis of the qualification. This means they must be consistent with the NZSCED assigned to the qualification.

2. The Strategic Purpose Statement must clearly identify the purposes of the base qualification, the strands and any optional or contextual endorsement(s). It will clearly show who will benefit from the qualification, the strands and any optional or contextual endorsements.

3. Where the qualification includes strands and/or optional endorsements, specific outcomes for each must be clearly identified within the graduate profile. Contextual endorsements are not reflected in the outcomes within the graduate profile.

4. The education pathway should include the qualification with strands, optional endorsements or contextual endorsements, where there is a relevant pathway.

5. The employment pathway should identify areas in which graduates with strands, optional endorsements or contextual endorsements may be qualified to work, where these exist.

6. The credit value assigned to a strand should reflect that it is a specialisation ‘that represents a major or significant component of the qualification’. This also applies to an optional endorsement. While size is not the only consideration, a 10 credit strand(optional endorsement for a 50 credit qualification would represent a significant component but a 2 credit strand(optional endorsement for a 50 credit qualification would not.

   It may be appropriate to consider the percentage of credits for strand or optional endorsement in relation to the core of the qualification. However, the strategic importance of the strand or optional endorsement and its purpose would be the main consideration.

7. The credit value for strands will depend on the disciplines or competence being recognised. However, the credit value of an optional endorsement should not be equal to, or exceed, the credit value that would allow it to be a qualification in its own right, that is 40 credits for a certificate and 120 credits for a diploma.

8. A qualification with an optional endorsement(s) must include sufficient content in the graduate profile outcomes of the base qualification so that it is meaningful as a standalone qualification.
9. All strands and optional endorsements must be at the same level as the base qualification.

10. Contextual endorsement is available for New Zealand qualifications where the context within which a graduate profile is demonstrated needs to be recognised. Clear parameters defining the contextual endorsement must be provided within the qualification specification – conditions on the qualification.

**Evaluation**

An evaluative approach is used to approve a qualification for listing on the New Zealand Qualifications Framework. The following enquiry questions focus specifically on the structure of qualifications, including strands and optional endorsements:

- How well have stakeholder (learner, employer, industry, community) needs been incorporated into the qualification design?

- How well do the specified outcomes reflect the strategic purpose of the qualification?

- What specific provisions are made in the qualification to allow it to be achieved in different cultural and delivery contexts?

- To what extent are the mandatory and optional conditions specified appropriate for the strategic purpose and outcome statement?

**Listing Requirements**

LR11, LR12, LR16, LR17, LR18.
Base qualification with Strands and an optional endorsement:

For example: Everyone must complete the core compulsory outcomes and then must gain a further 70 credits of Horticulture skills. If the graduate got these skills across a range of Horticulture sub-sectors they would achieve a New Zealand Certificate in Horticulture. However if a graduate specialised within those 70 credits, gaining 50 credits in the area of Vegetable Production, then they would be awarded the New Zealand Certificate in Horticulture (Vegetable Production).
Appendix F: Mandatory deliverables

Requirements and guidelines

All qualifications must be consistent with the general listing requirements outlined in Section 3 of The New Zealand Qualifications Framework.

New qualifications at Levels 1-6 must also meet the requirements outlined in Section 4 of this document, if they are to be listed on the NZQF.

NZQA offers guidelines for approval of qualifications at Levels 1-6 for listing on the NZQF.

To assist qualification developers in considering their approach to managing consistency for new qualifications, NZQA will be introducing new arrangements for managing consistency across levels 1-6 qualifications on the New Zealand Qualifications Framework. Further information, including decisions reached after consideration of feedback to the August 2013 consultation document can be found on the website under Managing national consistency of graduate outcomes for New Zealand qualifications. Industry and sector feedback is outlined in the report of consultation: Consistency of graduate outcomes of NZ qualifications; management, funding, and relationships with national external moderation.

Summary of requirements for application to develop qualifications

Approval to develop a qualification

Applications for approval to develop a qualification must include the following information and evidence:

- Qualification title, type, level and credit value
- New Zealand Standard Classification of Education (NZSCED) code (it may also include the Directory of Assessment Standards classification)
- A statement of strategic purpose
- A qualification outcome statement (including graduate profile, and education and employment pathways)
- Identification of any duplication with existing qualifications on the NZQF
- Explanation of need for qualification and evidence of confirmation of need
- The Stakeholder Profile for the qualification
- Description of stakeholder involvement and evidence of support
- Name and legal status of the qualification developer

The process and templates for submitting applications to NZQA can be found on the NZQF page of the NZQA website.

Listing qualifications on the NZQF

Qualification developers must seek approval to develop and list qualifications on the New Zealand Qualifications Framework (NZQF) from the relevant quality assurance body.

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The development of New Zealand qualifications at Levels 1-6 and their subsequent listing on the NZQF involve two distinct stages.

1. Application to develop

Initially, developers apply to NZQA for approval to develop a qualification. This stage ensures all new qualifications are relevant and do not duplicate those already on the NZQF.

NZQA requires the following forms and information at this stage:

- NZQF1 - Application for Approval to Develop a Qualification at Levels 1-6
- NZQF2 - Involvement in Pre-Development Stage Stakeholder Attestation

along with:

- a needs analysis, and
- evidence showing how decisions were made, so the quality assurance body analyst can understand how agreement was reached on the qualification detail – “the story”.

To report results of the qualifications review process, complete and submit:

- NZQF5: Report of the Qualifications Review
- NZQF6: Outcomes of a Qualifications Review: Changing the status of current qualifications

Qualification owners need to complete NZQF6 to confirm their acceptance of the proposed new suite of qualifications arising from the review.

About stakeholder attestations

Stakeholder attestations are required from all stakeholders directly involved in the qualification development. They provide evidence of the support for the qualifications and the extent of collaboration and involvement by stakeholders.

Link to: details about submitting an application for approval to develop a qualification.

2. Application for approval

The second stage occurs once the qualification has been developed and involves applying for NZQA approval. Once approved, that qualification is listed on the NZQF.

To submit an application for approval of a qualification, the following forms must be completed and information provided:

- NZQF3 - Application for Approval of a Qualification at Levels 1-6
- NZQF4 - Involvement in Qualification Development Stakeholder Attestation

Link to: details about submitting an application for approval of a qualification.

Once a qualification is registered on the NZQF, an institution that proposes providing a programme of study or training that leads to the newly listed qualification must apply to NZQA for approval of the programme. Details on programme approval and provider accreditation are available on the NZQA website, including new guidelines.
Appendix G: 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: http://www.nzqa.govt.nz/studying-in-new-zealand/nzqf/understand-nz-quals/

G.1 Qualification Types

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

<table>
<thead>
<tr>
<th>Diploma</th>
<th>Purpose</th>
<th>Outcomes</th>
<th>Credit requirements</th>
</tr>
</thead>
</table>
| **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:  
• 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. |
| **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:  
• 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:  
• 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. |
<table>
<thead>
<tr>
<th>Certificate</th>
<th>Purpose</th>
<th>Outcomes</th>
<th>Credit requirements</th>
</tr>
</thead>
</table>
| **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:  
- 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. |
| **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:  
- 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:  
- 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:  
- 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 | This certificate is listed at level 2 and must comprise of a minimum of 40 credits at level 2 or above. |
- collaborate with others.

<table>
<thead>
<tr>
<th>Certificate</th>
<th>Purpose</th>
<th>Outcomes</th>
<th>Credit requirements</th>
</tr>
</thead>
</table>
| 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:  
- 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. |

### G.2 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. The term application encompasses responsibility, behaviours, attitudes, attributes and competence.

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