Qualification details

Title	New Zealand Diploma in Software Testing (Level 6)		
Version	1	**Qualification type**	Diploma
Level	6	**Credits**	**120**
NZSCED	029999 Information Technology > Other Information Technology > Information Technology not elsewhere classified		
Qualification developer	NZQA National Qualifications Services (NQS)		
Next review	31 October 2023		
Approval date	October 2018		
Strategic purpose statement	*This qualification was co-developed by IT Professionals New Zealand (ITP) and NZQA National Qualifications Services (NQS).* 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 software testing, or to proceed to further study. Businesses, organisations and communities will benefit from having testing professionals who have developed a testing mindset. They will be able to verify and validate IT systems, and identify, analyse and communicate product/service and organisational risks to support product/service quality and organisational performance. Graduates will be capable of operating within the applicable professional standards and practice, both independently and as part of a team.		

Outcome Statement	Graduate profile	Graduates of this qualification will be able to: *Technical skills* 1. Apply the fundamental principles, concepts, processes, techniques and types of testing, consistent with industry standards, to support the delivery of quality systems. 2. Perform the role and responsibilities of a tester within the dynamics of a development team to support the test process across both waterfall and agile/lean development methodologies. 3. Determine test effort and approach, create and execute functional and non-functional test plans, in a context of waterfall and agile/lean methodologies to determine whether systems meet requirements. 4. Locate issues, analyse and report testing outcomes and findings in multiple scenarios using defect management tools, to enable effective reporting and decision making by the development team and key stakeholders.

		5. Select, configure and apply appropriate tools to support testing activities across software architectures, technology stacks, application types and industries.
		6. Create, maintain and run test scripts using a scripting language with industry standard tools to automate testing.
		Core skills
		7. Behave with integrity as a responsible IT professional, in accordance with legal and organisational regulatory requirements, applying professional and ethical practices.
		8. 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.
		9. Apply project management tools and techniques using knowledge of project planning, management and control, to an IT related project, to analyse and solve problems.
	Education pathway	This qualification provides an education pathway from: • New Zealand Diploma in Information Technology Technical Support (Level 5) [Ref: 2596] • New Zealand Diploma in Information Systems (Level 5) [Ref: 2597] • New Zealand Diploma in Web Design and Development (Level 5) [Ref: 2598] • New Zealand Diploma in Software Development (Level 6) [Ref: 2604] or other Level 5 IT related qualifications, or relevant industry experience, to specialised re-training into the field of software testing. This qualification provides a pathway to further specialisation through industry specific training in specialist fields of software testing, and industry certifications. Other education pathways include higher level IT-related qualifications and industry certifications.
	Employment pathway	Graduates of this qualification will have the skills and knowledge to gain employment in entry-level testing roles such as test analyst, tester, test engineer or other testing related support roles. Graduates will also have the skills and knowledge to progress into more advanced testing roles including test manager, senior/lead test analyst/engineer.

Qualification specifications

Qualification award	This qualification may be awarded by any education organisation with an approved programme of study or industry training.
Evidence requirements for assuring consistency	Evidence requirements may include: - effective internal and external moderation systems and processes, including results relating to graduate outcomes; - results of end-user surveys and actions taken or proposed

	from feedback. This includes consultation with graduates and employers to obtain destination information and end-user feedback specifically assessing the graduates against the graduate profile (e.g. employment, progression, further study);
	- samples of assessment materials and learners assessments/work (e.g. portfolios of work);
	- evidence of any benchmarking activities.
Minimum standard of achievement and standards for grade endorsements	The minimum standard of achievement required for the award of the qualification will be the achievement of all the graduate outcomes. There are no grade endorsements for this qualification.
Other requirements for the qualification (including regulatory body or legislative requirements)	Current legislation and regulations can be accessed at www.legislation.govt.nz. Current AS/NZS standards can be accessed at www.standards.govt.nz. Industry standards impacting testing include New Zealand Government web standards, appropriate International Organisation for Standardisation (ISO) and IEEE standards, and ISTQB guidelines. Relevant codes of ethics and professional practice, including the following, can be accessed at: - ITP Code of Ethics www.itp.nz/Members/Code-of-Ethics. - ITP Professional Practice Guidelines, including the ITP Code of Practice and ITP Professional Knowledge Curriculum www.itp.nz/Members/Practice-Guidelines. - ISTQB International Software Testing Qualifications Board Code of Ethics https://www.istqb.org/about-as/istqb%C2%AE-code-of-ethics-for-test-professionals.html

General conditions for the programme leading to the qualification

General conditions for programme	***Programme entry***
	It is recommended that people enrolling on programmes hold one of the following:
	- New Zealand Diploma in Information Technology Technical Support (Level 5) [Ref: 2596],
	- New Zealand Diploma in Information Systems (Level 5) [Ref: 2597]
	- New Zealand Diploma in Web Design and Development (Level 5) [Ref: 2598]
	- New Zealand Diploma in Software Development (Level 6) [Ref: 2604]
	- first year of an IT degree;
	and/or equivalent knowledge, skills and experience.
	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.

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. |

Conditions relating to the Graduate profile

Qualification outcomes	Conditions
Technical Skills	

1	Apply the fundamental principles, concepts, processes, techniques and types of testing, consistent with industry standards, to support the delivery of quality systems. Credits 15	Programmes must include where testing fits within the software development lifecycle (SDLC).
2	Perform the role and responsibilities of a tester within the dynamics of a development team to support the test process across both waterfall and agile/lean development methodologies. Credits 5	Programmes must include the purpose of a test strategy, test management, prioritising and planning.
3	Determine test effort and approach, create and execute functional and non-functional test plans, in a context of waterfall and agile/lean methodologies to determine whether systems meet requirements. Credits 30	Programmes must include creating test data and common causes of IT system and project failure.
4	Locate issues, analyse and report testing outcomes and findings in multiple scenarios using defect management tools, to enable effective reporting and decision making by the development team and key stakeholders. Credits 15	
5	Select, configure and apply appropriate tools to support testing activities across software architectures, technology stacks, application types and industries. Credits 10	
6	Create, maintain and run test scripts using a scripting language with industry standard tools to automate testing. Credits 15	Programmes must include differentiating common frameworks, design patterns, capabilities and the appropriate application of a range of automation tools/languages.
	Core Skills	
7	Behave with integrity as a responsible IT professional, in accordance with legal and	

	organisational regulatory requirements, applying professional and ethical practices. Credits 10	
8	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 presentation design for a variety of situations such as data visualisation and technical writing - help documents, user instructions and specifications.
9	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.