

ICT Information and Communications Technology

TRAINING PACKAGE

Version 3.1

WA NOMINAL HOURS GUIDE

Introduction

This Guide has been generated to enable the stakeholders in this Industry in Western Australia to participate in the managed implementation of the National ICT Information and Communications Technology Training Package.

This Guide is designed to aid Registered Training Organisations (RTOs) to convert from existing Training Package qualifications to new Training Package qualifications within the scope of their training delivery.

The Guide should be read in conjunction with the endorsed components of the Training Package.

Version 3.1 of the ICT Information and Communications Technology was released by Training.Gov.Au (TGA) on the 13/09/2016.

Transition Arrangements

Registered Training Organisations (RTOs) are required to deliver Training Package qualifications in accordance with the Standards for RTOs. For further information visit the Training Accreditation Council website www.tac.wa.gov.au.

Nominal Hours

Nominal hours are the hours of training notionally required to achieve the outcomes of units of competency.

Nominal hours are identified for nationally endorsed qualifications. Nominal hours may vary for a qualification depending on the selection of units of competency.

In Western Australia, nominal hours are used as a mechanism for funding allocation.

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Qualifications and Nominal Hours

The following table provides a summary of the qualifications and nominal hours in the industry.

National Code	National Title	Nominal Hours
ICT10115	Certificate I in Information, Digital Media and Technology	160
ICT20115	Certificate II in Information, Digital Media and Technology	370
ICT20215	Certificate II in Telecommunications Network Build and Operate	493
ICT20315	Certificate II in Telecommunications Technology	640
ICT30115	Certificate III in Information, Digital Media and Technology	610
ICT30215	Certificate III in Telecommunications Digital Reception Technology	635
ICT30315	Certificate III in Telecommunications Rigging Installation	702
ICT30415	Certificate III in Telecommunications Network Build and Operate	540
ICT30515	Certificate III in Telecommunications Technology	725
ICT40115	Certificate IV in Information Technology	690
ICT40215	Certificate IV in Information Technology Support	705
ICT40315	Certificate IV in Web-Based Technologies	705
ICT40415	Certificate IV in Information Technology Networking	660
ICT40515	Certificate IV in Programming	805
ICT40615	Certificate IV in Information Technology Testing	695
ICT40715	Certificate IV in Systems Analysis and Design	730
ICT40815	Certificate IV in Digital Media Technologies	700
ICT40915	Certificate IV in Digital and Interactive Games	730
ICT41015	Certificate IV in Computer Systems Technology	810
ICT41115	Certificate IV in Telecommunications Network Design	685
ICT41215	Certificate IV in Telecommunications Engineering Technology	720
ICT50115	Diploma of Information Technology	610
ICT50215	Diploma of Digital and Interactive Games	700

ICT50315	Diploma of Information Technology Systems Administration	575
ICT50415	Diploma of Information Technology Networking	715
ICT50515	Diploma of Database Design and Development	685
ICT50615	Diploma of Website Development	810
ICT50715	Diploma of Software Development	655
ICT50815	Diploma of Systems Analysis and Design	645
ICT50915	Diploma of Digital Media Technologies	850
ICT51015	Diploma of Telecommunications Engineering	770
ICT51115	Diploma of Telecommunications Planning and Design	680
ICT60115	Advanced Diploma of Information Technology	580
ICT60215	Advanced Diploma of Network Security	555
ICT60315	Advanced Diploma of Information Technology Business Analysis	635
ICT60415	Advanced Diploma of Information Technology Project Management	650
ICT60515	Advanced Diploma of Computer Systems Technology	1105
ICT60615	Advanced Diploma of Telecommunications Network Engineering	545
ICT80115	Graduate Certificate In Information Technology and Strategic Management	320
ICT80215	Graduate Certificate In Information Technology Sustainability	280
ICT80315	Graduate Certificate In Telecommunications	225
ICT80415	Graduate Diploma of Telecommunications Network Engineering	490
ICT80515	Graduate Diploma of Telecommunications and Strategic Management	525
ICT80615	Graduate Certificate In Telecommunications Network Engineering	280

Units of Competency and Nominal Hours

The following table provides a summary of the units of competency and nominal hours in the industry.

National Code	National Title	Nominal Hours
ICTBWN301	Perform tests on optical communication system and components	35
ICTBWN302	Install optical fibre splitters in fibre distribution hubs	35
ICTBWN303	Install lead-in module and cable for fibre to the premises	45
ICTBWN304	Work safely with live fibre to test and commission a fibre to the x installation	45
ICTBWN305	Use optical and radio frequency measuring instruments	35
ICTCBL201	Install customer cable support systems	60
ICTCBL202	Place and secure customer cable	60
ICTCBL203	Terminate metallic conductor customer cable	60
ICTCBL204	Install functional and protective telecommunications earthing system	80
ICTCBL205	Joint metallic conductor cable on customer premises	80
ICTCBL206	Alter services to existing cable system	80
ICTCBL207	Haul underground cable	40
ICTCBL208	Splice and terminate optical fibre cable for carriers and service providers	60
ICTCBL209	Joint and terminate coaxial cable	60
ICTCBL210	Install a telecommunications service to a building	50
ICTCBL211	Install an above ground equipment enclosure	60
ICTCBL212	Erect aerial cable supports	60
ICTCBL213	Construct underground telecommunications infrastructure	60
ICTCBL214	Fix aerial cable	60
ICTCBL215	Joint metallic conductor cable in access network	60
ICTCBL219	Apply safe technical work practices for cabling registration when configuring an ADSL circuit	35
ICTCBL220	Install a cable lead-in	10
ICTCBL236	Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule	55

ICTCBL237	Install, maintain and modify customer premises communications cabling: ACMA Open Rule	60
ICTCBL238	Install, maintain and modify customer premises communications cabling: ACMA Lift Rule	60
ICTCBL301	Install, terminate and certify structured cabling installation	30
ICTCBL302	Install and terminate optical fibre cable on customer premises	30
ICTCBL303	Install and terminate coaxial cable	20
ICTCBL304	Perform cable and system test on customer premises	60
ICTCBL305	Hand over cable systems and equipment	60
ICTCBL306	Locate and identify cable system faults	60
ICTCBL307	Install underground enclosures and conduit	60
ICTCBL308	Install underground cable	60
ICTCBL309	Construct aerial cable supports	60
ICTCBL310	Install aerial cable	60
ICTCBL311	Install systems and equipment on customer premises	60
ICTCBL312	Cutover new systems and equipment on customer premises	80
ICTCBL313	Modify and cutover cable	45
ICTCBL314	Install network cable equipment	60
ICTCBL315	Maintain cable network	40
ICTCBL316	Install ribbon fibre cable in the FTTX distribution network	55
ICTCBL317	Cut over metallic conductor cable in the access network	30
ICTCBL318	Install and cut over metallic conductor cable to access network cabinet	35
ICTCBL319	Rearrange large size copper cable	35
ICTCBL320	Jumper metallic conductor cable in the access network	25
ICTCBL401	Prepare design drawings and specification for a cable installation	120
ICTCBL402	Schedule and supply cabling installation	60
ICTCBL403	Supervise cabling project	100
ICTCBL404	Test cable bearers	80
ICTCBL405	Remotely locate and identify cable network faults	60
ICTCMP201	Organise and monitor cabling to ensure compliance with regulatory and industry standards	40

ICTCMP202	Perform restricted customer premises broadband cabling work: ACMA Restricted Rule	20
ICTCMP501	Undertake radio communications site audit	40
ICTDBS401	Identify physical database requirements	35
ICTDBS402	Complete database backup and restore	25
ICTDBS403	Create basic databases	40
ICTDBS404	Identify and resolve common database performance problems	25
ICTDBS407	Monitor physical database implementation	20
ICTDBS408	Link an RFID system to a database	25
ICTDBS409	Monitor and administer a database	25
ICTDBS412	Build a database	30
ICTDBS501	Monitor and improve knowledge management system	30
ICTDBS502	Design a database	50
ICTDBS503	Create a data warehouse	30
ICTDBS504	Integrate database with a website	25
ICTDBS601	Build a data warehouse	80
ICTDBS602	Develop a knowledge management strategy	80
ICTDBS603	Determine suitability of database functionality and scalability	30
ICTDMT401	Create visual design components for digital media	50
ICTDMT402	Produce interactive animation	60
ICTDMT403	Produce and edit digital images	40
ICTDMT501	Incorporate and edit digital video	50
ICTDRE301	Install digital reception equipment	50
ICTDRE302	Locate and rectify digital reception equipment faults	40
ICTDRE303	Install a complex digital reception system	50
ICTDRE304	Design communications wiring systems for customer premises	35
ICTDRE305	Develop integrated digital reception systems	35
ICTDRE401	Integrate customer digital reception equipment	40
ICTDRE402	Integrate data delivery modes	25

ICTEDU301	Train customers in new technology	40
ICTEDU501	Develop and deliver training associated with new and modified products	120
ICTGAM301	Apply simple modelling techniques	50
ICTGAM302	Design and apply simple textures to digital art	50
ICTGAM303	Review and apply the principles of animation	60
ICTGAM401	Produce an interactive game	60
ICTGAM402	Identify and apply principles of games design and game playing	40
ICTGAM403	Create design documents for interactive games	30
ICTGAM404	Apply artificial intelligence in game development	60
ICTGAM405	Write story and content for digital games	30
ICTGAM406	Create visual design components for interactive games	50
ICTGAM407	Write scripts for interactive games	60
ICTGAM408	Use 3-D animation interface and toolsets	40
ICTGAM409	Create 3-D characters for interactive games	50
ICTGAM410	Develop 3-D components for interactive games	50
ICTGAM412	Design interactive media	40
ICTGAM413	Design and create 3-D digital models	50
ICTGAM414	Create audio for digital games	50
ICTGAM415	Develop simple environments for 3-D games	30
ICTGAM416	Prepare and complete image rendering processes	50
ICTGAM417	Apply digital effects to interactive products	50
ICTGAM418	Use simple modelling for animation	40
ICTGAM419	Build a database to support a computer game	30
ICTGAM501	Create design concepts for digital games and 3-D media	30
ICTGAM503	Create a complex 3-D interactive computer game	60
ICTGAM504	Manage interactive media production	40
ICTGAM506	Create complex code for mobile game devices	60
ICTGAM507	Develop intermediate 3-D software for games and interactive media	60

ICTGAM508	Develop complex 3-D software for games and interactive media	60
ICTGAM509	Design interactive 3-D applications for scientific and mathematical modelling	60
ICTGAM510	Prepare games for different platforms and delivery modes	50
ICTGAM511	Manage testing of games and interactive media	30
ICTGAM512	Create and implement designs for a 3-D games environment	50
ICTGAM514	Design and create models for a 3-D and digital effects environment	50
ICTGAM515	Design and create advanced particles, fluids and bodies for 3-D digital effects	50
ICTGAM516	Animate a 3-D character for digital games	40
ICTGAM517	Produce a digital animation sequence	60
ICTGAM518	Animate physical attributes of models and elements	30
ICTGAM519	Manage technical art and rigging in 3-D animation	50
ICTGAM520	Create and combine 3-D digital games and components	30
ICTGAM521	Create interactive 3-D environments for digital games	40
ICTGAM522	Complete digital editing for the 3-D and digital effects environment	20
ICTGAM523	Collaborate in the design of 3-D game levels and environments	40
ICTGAM524	Integrate multiple data sources into interactive 3-D environments	30
ICTGAM525	Apply digital texturing for the 3-D environment in digital games	30
ICTGAM526	Create complex 3-D characters for games	60
ICTGAM527	Integrate database with online game	30
ICTGAM528	Create games for mobile devices	60
ICTGAM529	Analyse business opportunities in the digital games environment	30
ICTGAM530	Develop and implement physics in a 3-D digital game	40
ICTGAM531	Complete compositing to create elements for the 3-D and digital effects environment	40
ICTICT101	Operate a personal computer	20
ICTICT102	Operate word-processing applications	30
ICTICT103	Use, communicate and search securely on the internet	50
ICTICT104	Use digital devices	30
ICTICT105	Operate spreadsheet applications	30

ICTICT106	Operate presentation packages	25
ICTICT107	Use personal productivity tools	30
ICTICT108	Use digital literacy skills to access the internet	20
ICTICT201	Use computer operating systems and hardware	60
ICTICT202	Work and communicate effectively in an ICT environment	30
ICTICT203	Operate application software packages	60
ICTICT204	Operate a digital media technology package	40
ICTICT205	Design basic organisational documents using computing packages	40
ICTICT206	Install software applications	15
ICTICT207	Integrate commercial computing packages	25
ICTICT208	Operate accounting applications	30
ICTICT209	Interact with ICT clients	20
ICTICT210	Operate database applications	35
ICTICT211	Identify and use basic current industry specific technologies	40
ICTICT212	Incorporate Indigenous needs and perspectives into ICT environment	20
ICTICT301	Create user documentation	20
ICTICT302	Install and optimise operating system software	20
ICTICT303	Connect internal hardware components	30
ICTICT304	Implement system software changes	15
ICTICT305	Identify and use current industry specific technologies	60
ICTICT306	Migrate to new technology	25
ICTICT307	Customise packaged software applications for clients	40
ICTICT308	Use advanced features of computer applications	35
ICTICT401	Determine and confirm client business requirements	35
ICTICT402	Determine project specifications and secure client agreement	20
ICTICT403	Apply software development methodologies	20
ICTICT404	Use online learning tools	30
ICTICT405	Develop detailed technical design	55

ICTICT406	Build a graphical user interface	20
ICTICT407	Maintain website information standards	20
ICTICT408	Create technical documentation	20
ICTICT409	Develop macros and templates for clients using standard products	55
ICTICT410	Conduct post-implementation ICT system reviews	20
ICTICT411	Select and employ software and hardware testing tools	35
ICTICT412	Coordinate and maintain ICT work teams	25
ICTICT413	Relate to clients on a business level	20
ICTICT415	Provide one-to-one instruction	20
ICTICT416	Contribute to the development of strategic plans	20
ICTICT417	Identify, evaluate and apply current industry-specific technologies to meet industry standards	60
ICTICT418	Contribute to copyright, ethics and privacy in an ICT environment	40
ICTICT419	Work effectively in the digital media industry	30
ICTICT420	Develop client user interface	40
ICTICT421	Connect, maintain and configure hardware components	40
ICTICT422	Participate in ICT services	20
ICTICT423	Select cloud storage strategies	35
ICTICT501	Research and review hardware technology options for organisations	20
ICTICT502	Develop detailed component specifications from project specifications	40
ICTICT503	Validate quality and completeness of system design specifications	20
ICTICT504	Confirm transition strategy for a new system	10
ICTICT505	Determine acceptable developers for projects	30
ICTICT506	Implement process re-engineering strategies	20
ICTICT507	Select new technology models for business	20
ICTICT508	Evaluate vendor products and equipment	20
ICTICT509	Gather data to identify business requirements	30
ICTICT510	Determine appropriate ICT strategies and solutions	25
ICTICT511	Match ICT needs with the strategic direction of the enterprise	25

ICTICT512	Plan process re-engineering strategies for business	30
ICTICT514	Identify and manage the implementation of current industry specific technologies	60
ICTICT515	Verify client business requirements	40
ICTICT516	Test telecommunications network using virtual instruments	60
ICTICT601	Develop ICT strategic and action plans	25
ICTICT602	Develop contracts and manage contracted performance	25
ICTICT603	Manage the use of appropriate development methodologies	30
ICTICT604	Identify and implement business innovation	60
ICTICT605	Implement a knowledge management strategy	30
ICTICT606	Develop communities of practice	30
ICTICT608	Interact with clients on a business level	40
ICTICT609	Lead the evaluation and implementation of current industry specific technologies	80
ICTICT610	Manage copyright, ethics and privacy in an ICT environment	30
ICTICT801	Lead research into identifying new marketplace opportunities	80
ICTICT802	Direct ICT services	80
ICTICT803	Endorse business plan components for a new initiative	80
ICTICT804	Direct ICT in a supply chain	80
ICTICT805	Direct ICT procurement	80
ICTICT806	Direct outsourced ICT services	80
ICTICT807	Direct research and business response to new ICT technology	80
ICTICT808	Direct the development of a knowledge management strategy for a business	80
ICTICT809	Facilitate business analysis	80
ICTICT810	Synchronise ICT projects	80
ICTICT811	Manage an information architecture project	80
ICTICT812	Develop a business intelligence framework	80
ICTICT813	Manage ICT services	80
ICTICT814	Develop cloud computing strategies for a business	35
ICTICT815	Manage automated ICT system applications using enterprise wide operating system	45

ICTNPL401	Apply business acumen to network planning	45
ICTNPL402	Plan the deployment of access network architectures	50
ICTNPL403	Evaluate the capability of access networks	45
ICTNPL404	Evaluate the planning requirements for provisioning a telecommunications building facility	60
ICTNPL405	Develop provisioning of telecommunications building works project	45
ICTNPL406	Evaluate core network architectures	60
ICTNPL407	Plan the deployment of core network	45
ICTNPL408	Produce planning specifications for end-to-end service delivery	45
ICTNPL409	Apply knowledge of regulation and legislation for the telecommunications industry	60
ICTNPL410	Plan the telecommunications access network for an estate	80
ICTNPL411	Apply compliance requirements to telecommunications work	60
ICTNPL501	Develop planning strategies for core network design	45
ICTNPL502	Develop planning strategies for access network design	55
ICTNPL503	Apply service measures and demand forecasting to products and services planning	45
ICTNPL504	Develop planning strategies for building environment design	45
ICTNPL601	Plan the development and growth of the telecommunications network	120
ICTNPL602	Forecast service demand	120
ICTNPL603	Undertake network performance analysis	120
ICTNWK301	Provide network systems administration	20
ICTNWK302	Determine and action network problems	30
ICTNWK303	Configure and administer a network operating system	40
ICTNWK304	Administer network peripherals	20
ICTNWK305	Install and manage network protocols	30
ICTNWK306	Evaluate characteristics of cloud computing solutions and services	35
ICTNWK401	Install and manage a server	20
ICTNWK402	Install and configure virtual machines for sustainable ICT	50
ICTNWK403	Manage network and data integrity	40
ICTNWK404	Install, operate and troubleshoot a small enterprise branch network	60

ICTNWK405	Build a small wireless local area network	20
ICTNWK406	Install, configure and test network security	50
ICTNWK407	Install and configure client-server applications and services	40
ICTNWK408	Configure a desktop environment	40
ICTNWK409	Create scripts for networking	40
ICTNWK410	Install hardware to a network	40
ICTNWK411	Deploy software to networked computers	35
ICTNWK412	Create network documentation	40
ICTNWK414	Create a common gateway interface script	40
ICTNWK416	Build security into virtual private networks	20
ICTNWK417	Build an enterprise wireless network	20
ICTNWK418	Implement backbone technologies in a local area network	40
ICTNWK419	Identify and use current virtualisation technologies	35
ICTNWK501	Plan, implement and test enterprise communication solutions	80
ICTNWK502	Implement secure encryption technologies	20
ICTNWK503	Install and maintain valid authentication processes	25
ICTNWK504	Design and implement an integrated server solution	50
ICTNWK505	Design, build and test a network server	50
ICTNWK506	Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network	90
ICTNWK507	Install, operate and troubleshoot medium enterprise routers	120
ICTNWK508	Install, operate and troubleshoot medium enterprise switches	90
ICTNWK509	Design and implement a security perimeter for ICT networks	60
ICTNWK510	Develop, implement and evaluate system and application security	55
ICTNWK511	Manage network security	45
ICTNWK513	Manage system security	45
ICTNWK514	Model preferred system solutions	35
ICTNWK515	Develop configuration management protocols	30
ICTNWK516	Determine best-fit topology for a local network	20

ICTNWK517	Determine best-fit topology for a wide area network	20
ICTNWK518	Design an enterprise wireless local area network	25
ICTNWK519	Design an ICT security framework	25
ICTNWK520	Design ICT system security controls	30
ICTNWK521	Install, configure and test a payment gateway	30
ICTNWK522	Build decks using wireless markup language	30
ICTNWK524	Install and configure network access storage devices	40
ICTNWK525	Configure an enterprise virtual computing environment	60
ICTNWK527	Manage an enterprise virtual computing environment	60
ICTNWK529	Install and manage complex ICT networks	55
ICTNWK531	Configure an internet gateway	20
ICTNWK532	Identify and resolve network problems	30
ICTNWK533	Configure and manage advanced virtual computing environments	35
ICTNWK534	Monitor and troubleshoot virtual computing environments	35
ICTNWK535	Install an enterprise virtual computing environment	50
ICTNWK601	Design and implement a security system	90
ICTNWK602	Plan, configure and test advanced server-based security	80
ICTNWK603	Plan, configure and test advanced internetwork routing solutions	120
ICTNWK604	Plan and configure advanced internetwork switching solutions	120
ICTNWK605	Design and configure secure integrated wireless systems	40
ICTNWK606	Implement voice applications over secure wireless networks	40
ICTNWK607	Design and implement wireless network security	60
ICTNWK608	Configure network devices for a secure network infrastructure	40
ICTNWK609	Configure and manage intrusion prevention system on network sensors	40
ICTNWK610	Design and build integrated VoIP networks	50
ICTNWK611	Configure call processing network elements for secure VoIP networks	40
ICTNWK612	Plan and manage troubleshooting advanced integrated IP networks	120
ICTNWK613	Develop plans to manage structured troubleshooting process of enterprise networks	40

ICTNWK614	Manage ICT security	70
ICTNWK615	Design and configure desktop virtualisation	70
ICTNWK616	Manage security, privacy and compliance of cloud service deployment	35
ICTNWK617	Configure and manage a storage area network	45
ICTOPN401	Install and test a dense wavelength division multiplexing system	55
ICTOPN402	Use advanced optical test equipment	45
ICTOPN403	Prepare activity plans and specifications for a fibre to the x installation	55
ICTOPN501	Plan and configure dense wavelength division multiplexing systems	55
ICTOPN502	Perform acceptance and commissioning tests on optical network	45
ICTOPN503	Plan for an optical system upgrade and cut over	55
ICTOPN504	Test and commission a dense wavelength division multiplexing transmission system	50
ICTOPN505	Test the performance of specialised optical devices	45
ICTOPN506	Analyse and integrate specialised optical devices in the network	60
ICTOPN601	Manage optical ethernet transmission	55
ICTOPN602	Manage dense wavelength division multiplexing transmission system	55
ICTOPN603	Design a dense wavelength division multiplexing system	45
ICTOPN604	Analyse optical transmission systems	45
ICTPMG201	Prepare site for support installation	60
ICTPMG202	Plan, organise and undertake work activities	30
ICTPMG401	Support small scale ICT projects	60
ICTPMG402	Schedule installation of customer premises equipment	40
ICTPMG403	Manage the delivery of network infrastructure	60
ICTPMG501	Manage ICT projects	80
ICTPMG502	Develop customer premises equipment installation project plans	120
ICTPMG503	Prepare a project brief	120
ICTPMG504	Prepare project specifications	120
ICTPMG601	Establish ICT project governance	40
ICTPMG602	Manage ICT project initiation	40

ICTPMG603	Manage ICT project planning	40
ICTPMG604	Manage ICT project delivery	40
ICTPMG605	Manage ICT project closure	40
ICTPMG606	Manage ICT project quality	40
ICTPMG607	Manage and control ICT project risks	40
ICTPMG608	Manage ICT project systems implementation	40
ICTPMG609	Plan and direct complex ICT projects	80
ICTPMG610	Develop a project management plan	70
ICTPMG611	Prepare a detailed design brief	40
ICTPMG801	Manage a telecommunications workplace	45
ICTPMG802	Manage a telecommunications project	45
ICTPMG803	Undertake a telecommunications project	45
ICTPMG804	Evaluate and use telecommunications management networks	70
ICTPRG301	Apply introductory programming techniques	40
ICTPRG401	Maintain open-source code programs	20
ICTPRG402	Apply query language	60
ICTPRG403	Develop data-driven applications	60
ICTPRG404	Test applications	50
ICTPRG405	Automate processes	40
ICTPRG406	Apply introductory object-oriented language skills	60
ICTPRG407	Write script for software applications	40
ICTPRG409	Develop mobile applications	50
ICTPRG410	Build a user interface	50
ICTPRG412	Configure and maintain databases	50
ICTPRG413	Use a library or pre-existing components	35
ICTPRG414	Apply introductory programming skills in another language	60
ICTPRG415	Apply skills in object-oriented design	35
ICTPRG416	Manage a software component re-use library	35

ICTPRG417	Apply mathematical techniques for software development	20
ICTPRG418	Apply intermediate programming skills in another language	60
ICTPRG419	Analyse software requirements	60
ICTPRG425	Use structured query language	55
ICTPRG426	Prepare software development review	25
ICTPRG427	Use XML effectively	50
ICTPRG428	Use regular expressions in programming languages	40
ICTPRG501	Apply advanced object-oriented language skills	80
ICTPRG502	Manage a project using software management tools	60
ICTPRG503	Debug and monitor applications	40
ICTPRG504	Deploy an application to a production environment	40
ICTPRG505	Build advanced user interface	60
ICTPRG506	Design application architecture	40
ICTPRG507	Implement security for applications	50
ICTPRG508	Create mashups	50
ICTPRG509	Build using rapid application development	35
ICTPRG510	Maintain custom software	35
ICTPRG511	Monitor and support data conversion to new ICT system	10
ICTPRG512	Prepare for the build phase of an ICT system	20
ICTPRG513	Coordinate the build phase of an ICT system	20
ICTPRG514	Prepare for software development using rapid application development	25
ICTPRG515	Review developed software	25
ICTPRG516	Develop integration blueprint for ICT systems	20
ICTPRG517	Install, test and evaluate pilot version of ICT system	20
ICTPRG518	Monitor the system pilot	20
ICTPRG520	Validate an application design against specifications	40
ICTPRG523	Apply advanced programming skills in another language	80
ICTPRG524	Develop high-level object-oriented class specifications	45

ICTPRG525	Build Java applets	30
ICTPRG526	Maintain functionality of legacy code programs	40
ICTPRG527	Apply intermediate object-oriented language skills	50
ICTPRG528	Perform ICT data conversion	20
ICTPRG529	Apply testing techniques for software development	40
ICTPRG601	Develop advanced mobile multi-touch applications	80
ICTPRG602	Manage the development of technical solutions from business specifications	40
ICTPRG604	Create cloud computing services	60
ICTPRO501	Develop training, marketing and sales resources for telecommunications products	60
ICTRFN201	Install a satellite antenna	40
ICTRFN202	Install a terrestrial antenna	40
ICTRFN301	Install a radio communications antenna and feedline	60
ICTRFN302	Install mobile telecommunications in motor vehicles	80
ICTRFN303	Install WiMAX customer premises equipment broadband wireless access equipment	35
ICTRFN304	Construct and test a radio communications device	40
ICTRFN305	Operate and maintain radio communications technical instruments and field equipment	40
ICTRFN401	Conduct radio frequency measurements	40
ICTRFN402	Select antenna system for radio communications	25
ICTRFN403	Test and repair cellular network equipment	55
ICTRFN404	Undertake radio communications signals monitoring	40
ICTRFN405	Install radio communications base station equipment	45
ICTRFN406	Maintain hybrid fibre coaxial broadband cable network	45
ICTRFN501	Test cellular handset enhancements and international roaming agreements	50
ICTRFN502	Test and measure cellular phone and network equipment performance	50
ICTRFN503	Evaluate and analyse radio frequency signal coverage plots	40
ICTRFN601	Monitor the capacity of and recommend changes to the cellular mobile network	60
ICTRFN602	Produce and evaluate architecture designs for WiMAX networks	60
ICTRFN801	Produce a radio link budget	45

ICTRFN802	Analyse a cellular mobile network system	60
ICTRFN803	Analyse a satellite communications system	55
ICTSAD401	Develop and present feasibility reports	25
ICTSAD501	Model data objects	30
ICTSAD502	Model data processes	30
ICTSAD503	Minimise risk of new technologies to business solutions	30
ICTSAD504	Implement quality assurance processes for business solutions	30
ICTSAD505	Develop technical requirements for business solutions	30
ICTSAD506	Produce a feasibility report	30
ICTSAD601	Perform ICT-focused enterprise analysis	40
ICTSAD602	Conduct knowledge audits	40
ICTSAD603	Plan and monitor business analysis activities in an ICT environment	40
ICTSAD604	Manage and communicate ICT solutions	40
ICTSAD605	Elicit ICT requirements	40
ICTSAD606	Analyse stakeholder requirements	40
ICTSAD607	Manage assessment and validation of ICT solutions	40
ICTSAS201	Maintain inventories for equipment, software and documentation	15
ICTSAS202	Apply problem-solving techniques to routine ICT malfunctions	20
ICTSAS203	Connect hardware peripherals	25
ICTSAS204	Record client support requirements	15
ICTSAS205	Maintain ICT system integrity	20
ICTSAS206	Detect and protect from spam and destructive software	10
ICTSAS207	Protect and secure information assets	15
ICTSAS208	Maintain ICT equipment and consumables	15
ICTSAS209	Connect and use a home based local wireless network	30
ICTSAS301	Run standard diagnostic tests	15
ICTSAS303	Care for computer hardware	20
ICTSAS304	Provide basic system administration	25

ICTSAS305	Provide ICT advice to clients	35
ICTSAS306	Maintain equipment and software	25
ICTSAS307	Install, configure and secure a small office or home office network	50
ICTSAS401	Perform unit test for a class	40
ICTSAS402	Implement configuration management strategies	25
ICTSAS403	Review site environmental factors prior to ICT system implementation	15
ICTSAS404	Acquire ICT system components	15
ICTSAS405	Identify and evaluate ICT industry vendor technologies	15
ICTSAS406	Implement and hand over system components	20
ICTSAS407	Conduct pre-installation audit for software installation	25
ICTSAS408	Complete data transition in data migration process	25
ICTSAS409	Manage risks involving ICT systems and technology	20
ICTSAS410	Identify and resolve client ICT problems	35
ICTSAS411	Assist with policy development for client support procedures	15
ICTSAS412	Action change requests	45
ICTSAS413	Manage resolution of system faults on a live system	35
ICTSAS414	Evaluate system status	20
ICTSAS415	Optimise ICT system performance	30
ICTSAS416	Implement maintenance procedures	10
ICTSAS417	Undertake ICT system capacity planning	50
ICTSAS418	Monitor and administer security of an ICT system	20
ICTSAS419	Support system software	45
ICTSAS420	Provide first-level remote help desk support	35
ICTSAS421	Support users and troubleshoot desktop applications	20
ICTSAS422	Scope implementation requirements	15
ICTSAS424	Support different operating systems	40
ICTSAS425	Configure and troubleshoot operating system software	40
ICTSAS426	Locate and troubleshoot ICT equipment, system and software faults	40

ICTSAS501	Develop, implement and evaluate an incident response plan	25
ICTSAS502	Establish and maintain client user liaison	20
ICTSAS503	Perform systems tests	25
ICTSAS504	Develop and conduct client acceptance test	25
ICTSAS505	Review and update disaster recovery and contingency plans	30
ICTSAS506	Update ICT system operational procedures	30
ICTSAS507	Implement and evaluate systems for regulatory and standards compliance	15
ICTSAS509	Provide client ICT support services	20
ICTSAS510	Review and develop ICT maintenance strategy	35
ICTSAS511	Prioritise ICT change requests	15
ICTSAS512	Review and manage delivery of maintenance services	25
ICTSAS513	Develop detailed test plans	30
ICTSAS514	Perform integration tests	25
ICTSAS515	Manage the testing process	15
ICTSAS516	Perform stress and load tests on integrated platforms	25
ICTSAS517	Use network tools	50
ICTSAS518	Install and upgrade operating systems	50
ICTSAS601	Implement change management processes	30
ICTSMB401	Set up and operate a contractor business	40
ICTSMB402	Operate a contractor business with employees	60
ICTSUS401	Install and test renewable energy system for ICT networks	55
ICTSUS402	Install and test power saving hardware	55
ICTSUS403	Install and test power management software	45
ICTSUS404	Install thin client applications for power over ethernet	55
ICTSUS501	Implement server virtualisation for a sustainable ICT system	70
ICTSUS601	Integrate sustainability in ICT planning and design projects	50
ICTSUS602	Establish a business case for sustainability and competitive advantage in ICT projects	50
ICTSUS801	Plan and manage virtualisation for ICT sustainability	80

ICTSUS802	Conduct a business case study for integrating sustainability in ICT planning and design projects	80
ICTSUS803	Research strategies using SAP solutions for sustainable economic and environmental outcomes	80
ICTSUS804	Use ICT to improve sustainability outcomes	45
ICTSUS805	Manage improvements in ICT sustainability	50
ICTSUS806	Lead applied research in ICT sustainability	55
ICTSUS807	Conduct and manage a life cycle assessment for sustainability	55
ICTTCR201	Use rigging practices and systems on telecommunications network structures	40
ICTTCR202	Use operational safety in a telecommunications rigging environment	40
ICTTCR203	Use safe rigging practices to climb and perform rescues on telecommunications network structures	40
ICTTCR301	Build a telecommunications radio structure	80
ICTTCR302	Install radio plant and equipment on telecommunications structures	55
ICTTCR303	Protect against electromagnetic radiation and systems hazards when working on telecomms radio sites	35
ICTTEN201	Use electrical skills in telecommunications work	35
ICTTEN202	Use hand and power tools	40
ICTTEN203	Install and configure a home or small office network	55
ICTTEN204	Install and configure a small to medium business network	55
ICTTEN205	Build and maintain a secure network	70
ICTTEN206	Operate new media software packages	35
ICTTEN207	Install and test internet protocol devices in convergence networks	45
ICTTEN301	Provide infrastructure for telecommunications network equipment	80
ICTTEN302	Install telecommunications network equipment	80
ICTTEN303	Locate, identify and rectify recurrent network faults	45
ICTTEN304	Recover customer premises equipment	60
ICTTEN305	Refurbish customer premises equipment	60
ICTTEN306	Commission an electronic unit	60
ICTTEN307	Repair and replace telecommunications network hardware	60
ICTTEN308	Maintain an electronic system	60
ICTTEN309	Provide infrastructure for telecommunications network customer equipment	55

ICTTEN310	Remove and replace electronic circuit boards in carrier equipment	20
ICTTEN311	Inspect, clean and handle optical fibre cable and connectors	20
ICTTEN401	Identify requirements for customer telecommunications equipment	60
ICTTEN402	Estimate and quote for customer telecommunications equipment installation	60
ICTTEN403	Assign a transmission path	40
ICTTEN404	Install and configure a wireless mesh network	55
ICTTEN405	Install configuration programs on PC based customer equipment	60
ICTTEN406	Effect changes to existing customer premises equipment systems and equipment	60
ICTTEN407	Cut over customer premises equipment major upgrades	35
ICTTEN408	Complete equipment and software upgrades	80
ICTTEN409	Commission an electronic system	60
ICTTEN410	Locate, diagnose and rectify faults	50
ICTTEN411	Monitor, analyse and action telecommunications network alarms	60
ICTTEN412	Undertake routine maintenance of the telecommunications network	60
ICTTEN413	Undertake remote diagnosis and repair of network faults	50
ICTTEN414	Repair telecommunication system faults	40
ICTTEN415	Install and configure internet protocol TV in a home network	45
ICTTEN416	Install, configure and test an internet protocol network	45
ICTTEN417	Install, configure and test a router	55
ICTTEN418	Install and test a radio frequency identification system	45
ICTTEN419	Implement and troubleshoot enterprise routers and switches	85
ICTTEN420	Design, install and configure an internetwork	85
ICTTEN421	Apply advanced routing protocols to network design	70
ICTTEN422	Configure and troubleshoot advanced network switching	80
ICTTEN423	Install and maintain a wide area network	70
ICTTEN424	Install and configure internet protocol TV in a service provider network	55
ICTTEN425	Design, install and configure a customer smart technology network	45
ICTTEN426	Design network projects	70

ICTTEN427	Conduct site surveys to identify carrier installation requirements	35
ICTTEN428	Prepare design drawings and specification for telecommunications installations	45
ICTTEN429	Estimate and quote for carrier telecommunications equipment installations	25
ICTTEN430	Design infrastructure for telecommunications network installations	45
ICTTEN431	Design a dense wavelength division multiplexing system	55
ICTTEN501	Provide consultancy and technical support in the customer premises equipment sector	120
ICTTEN502	Design a telecommunications project	120
ICTTEN503	Design an electronic system for a telecommunications network	120
ICTTEN504	Acceptance test new systems and equipment	120
ICTTEN505	Commission telecommunications network equipment	120
ICTTEN506	Integrate new systems and equipment into the telecommunications network	120
ICTTEN507	Cut over new and replacement network equipment	120
ICTTEN508	Locate, diagnose and rectify complex faults	55
ICTTEN509	Provide expert advice and support on complex faults	120
ICTTEN510	Undertake planned outage management	40
ICTTEN511	Administer a data communications network	80
ICTTEN512	Design and implement an enterprise voice over	60
ICTTEN513	Install, configure and test a local area network switch	55
ICTTEN514	Install, configure and test a server	55
ICTTEN515	Dimension and design a radio frequency identification system	55
ICTTEN516	Produce technical solutions from business specifications	45
ICTTEN517	Plan a wireless mesh network	55
ICTTEN601	Undertake qualification testing of new or enhanced equipment and systems	120
ICTTEN602	Undertake system administration	120
ICTTEN603	Undertake network traffic management	120
ICTTEN604	Coordinate fault rectification and restoration of service following network outages	120
ICTTEN605	Implement planned network changes with minimal impact to the customer	120
ICTTEN606	Manage a common channel signalling network	120

ICTTEN607	Analyse and organise repair of highly complex telecommunications network faults	120
ICTTEN608	Verify new software and hardware releases	120
ICTTEN609	Produce and evaluate architecture designs for convergent cellular mobile networks	60
ICTTEN610	Design and configure an IP-MPLS network with virtual private network tunnelling	70
ICTTEN611	Produce an ICT network architecture design	55
ICTTEN612	Design and manage internet protocol TV in a service provider network	55
ICTTEN801	Plan a transmission network	55
ICTTEN802	Manage alignment of systems with product and technology strategy	35
ICTTEN803	Translate domain and solution architectures into platform requirements and designs	55
ICTTEN804	Manage end to end architectural solutions across multiple domains	55
ICTTEN805	Manage solution architecture and impacts in line with organisational processes	55
ICTTEN806	Manage application layer solutions	55
ICTTEN807	Manage voice, data and internet protocol network solutions	55
ICTTEN808	Manage network testing strategies	55
ICTTEN809	Analyse business specifications to produce technical solutions	55
ICTTEN810	Investigate the application of cloud networks in telecommunications switching	55
ICTTEN811	Evaluate and apply network security	55
ICTTEN812	Evaluate and apply digital signal processing to communications system	55
ICTTEN813	Produce engineering solutions using numerical computations and simulation	55
ICTTEN814	Manage development and application of testing artefacts	55
ICTTEN815	Manage project requirements and process implementations	55
ICTTEN816	Scope project requirements and process solutions	55
ICTWEB201	Use social media tools for collaboration and engagement	20
ICTWEB301	Create a simple markup language document	30
ICTWEB302	Build simple websites using commercial programs	50
ICTWEB303	Produce digital images for the web	30
ICTWEB401	Design a website to meet technical requirements	40
ICTWEB402	Confirm accessibility of websites for people with special needs	10

ICTWEB403	Transfer content to a website using commercial packages	20
ICTWEB404	Maintain website performance	30
ICTWEB405	Monitor traffic and compile website traffic reports	15
ICTWEB406	Create website testing procedures	20
ICTWEB407	Conduct operational acceptance tests of websites	20
ICTWEB408	Ensure basic website security	20
ICTWEB409	Develop cascading style sheets	20
ICTWEB410	Apply web authoring tool to convert client data for websites	20
ICTWEB411	Produce basic client-side script for dynamic web pages	40
ICTWEB412	Produce interactive web animation	80
ICTWEB413	Optimise search engines	50
ICTWEB414	Design simple web page layouts	50
ICTWEB415	Produce server-side script for dynamic web pages	60
ICTWEB416	Customise content management system	80
ICTWEB417	Integrate social web technologies	40
ICTWEB418	Use development software and ICT tools to build a basic website	20
ICTWEB419	Develop guidelines for uploading information to a website	20
ICTWEB420	Write content for web pages	30
ICTWEB421	Ensure website content meets technical protocols and standards	30
ICTWEB422	Ensure website access and useability	15
ICTWEB423	Ensure dynamic website security	25
ICTWEB424	Evaluate and select a web hosting service	15
ICTWEB425	Apply structured query language to extract and manipulate data	60
ICTWEB429	Create a markup language document to specification	20
ICTWEB501	Build a dynamic website	30
ICTWEB502	Create dynamic web pages	30
ICTWEB503	Create web-based programs	60
ICTWEB504	Build a document using eXtensible markup language	30

ICTWEB505	Develop complex web page layouts	40
ICTWEB506	Develop complex cascading style sheets	40
ICTWEB507	Customise a complex ICT content management system	80
ICTWEB508	Develop website information architecture	30
ICTWEB509	Use site server tools for transaction management	20
ICTWEB510	Analyse information and assign meta tags	20
ICTWEB511	Implement quality assurance process for websites	20
ICTWEB512	Administer business websites and servers	30
ICTWEB515	Implement and use web services	50
ICTWEB516	Research and apply emerging web technology trends	80
ICTWHS201	Provide telecommunications services safely on roofs	45
ICTWHS202	Work safely in a radio frequency electromagnetic radiation environment	35
ICTWHS203	Work safely near power infrastructure	30
ICTWHS204	Follow work health and safety and environmental policy and procedures	35
ICTWOR201	Work effectively in telecommunications technology	40
ICTWOR301	Organise resources	60
ICTWOR302	Organise material supply	60
ICTWOR303	Schedule resources	40
ICTWOR304	Manage spare parts	60
ICTWOR305	Supervise worksite activities	40
ICTWOR306	Resolve technical enquiries using multiple information systems	35
ICTWOR307	Collect and analyse technical information	25
ICTWOR401	Undertake a civil site survey	40
ICTWOR402	Schedule equipment maintenance	60

Mapping Qualifications

The following table provides an overview of the qualifications from version 3.1 which replace qualifications from the existing version of the ICT10 Information and Communications Technology Training Package.

No changes occurred between versions 3 and 3.1.

Mapping Units of Competency

The following table provides an overview of the units of competency from version 3.10 which replace units of competency from the existing version of the ICT10 Information and Communications Technology Training Package.

ICT Current Unit					ICT Replacement Unit	
National Code	National Title	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
ICTNWK526	Install an enterprise virtual computing environment	60			Unit deleted, no replacement	