ICT: Information and Communications Technology

TRAINING PACKAGE

Version 9.1

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 9.1 of the ICT Information and Communications Technology was released by Training.Gov.Au (TGA) on the 20/06/2025.

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 training package.

National Code	National Title	Nominal Hours
ICT20120	Certificate II in Applied Digital Technologies	385
ICT20219	Certificate II in Telecommunications Network Build and Operation	455
ICT20319	Certificate II in Telecommunications Technology	545
ICT30120	Certificate III in Information Technology	410
ICT30419	Certificate III in Telecommunications Network Build and Operation	500
ICT30524	Certificate III in Telecommunications Technology	590
ICT40120	Certificate IV in Information Technology	805
ICT41119	Certificate IV in Telecommunications Network Design	710
ICT41219	Certificate IV in Telecommunications Engineering Technology	815
ICT50220	Diploma of Information Technology	760
ICT60220	Advanced Diploma of Information Technology	740

Skill Sets and Nominal Hours

The following table provides a summary of the skill sets and nominal hours in the training package.

National Code	National Title	Nominal Hours
ICTSS00077	Telecommunications Linesworker Copper Skill Set	275
ICTSS00078	Telecommunications Linesworker Fibre Skill Set	290
ICTSS00080	Copper Cable Jointer Skill Set	285
ICTSS00083	Underground Installations Skill Set	115
ICTSS00084	Basic Open Cabler Registration Skill Set	170
ICTSS00085	Basic Restricted Cabler Registration Skill Set	185
ICTSS00086	ACMA Advanced Cabler Registration Skill Set	250
ICTSS00087	Basic Technician Network Build and Operate Skill Set	215
ICTSS00091	Radio Technician Skill Set	380
ICTSS00092	Technical Help Desk Support Skill Set	105
ICTSS00093	Telecommunications Linesworker HFC Skill Set	250
ICTSS00094	Technician Fibre Skill Set	285
ICTSS00095	Fibre Splicer Skill Set	250
ICTSS00096	Technician Hybrid Fibre Coaxial Skill Set	185
ICTSS00097	Telecommunications Customer Service Technician - HFC Technician Skill Set	255
ICTSS00098	Network Technician HFC Skill Set	315
ICTSS00099	Cloud Design and Configuration Skill Set	195
ICTSS00100	Cloud Implementation and Maintenance Skill Set	225
ICTSS00101	Cyber Incident Response Skill Set	105
ICTSS00102	Cyber Incident Threat Detection and Prevention Skill Set	145
ICTSS00103	Cyber Security Strategy and Governance Skill Set	140
ICTSS00104	Data Analysis Skill Set	165
ICTSS00105	Internet of Things Developer Skill Set	135

ICTSS00106	Introductory Tools and Applications Skill Set	195
ICTSS00107	Introductory Help Desk Skill Set	75
ICTSS00108	Digital Skills for Small Business Skill Set	135
ICTSS00109	Entry to Tech Skill Set	140
ICTSS00110	Radio Frequency Skill Set	160
ICTSS00111	Optical Networking Skill Set	170
ICTSS00113	Telecommunications Networking Management Skill Set	425
ICTSS00114	Advanced Telecommunications Networking Skill Set	325
ICTSS00115	XG Cellular Network Infrastructure Rollout Skill Set	190
ICTSS00116	XG Cellular Network Implementation Skill Set	210
ICTSS00117	Cyber Security Insider Risks and Threats Skill Set	245
ICTSS00118	User Experience Design Skill Set	235
ICTSS00119	Advanced Data Analytics Skill Set	120
ICTSS00120	Artificial Intelligence Skill Set	145
ICTSS00121	Extended Reality Skill Set	165
ICTSS00122	Industrial Automation Skill Set	215
ICTSS00123	Software Automation Skill Set	175
ICTSS00124	Cloud Infrastructure Skill Set	145
ICTSS00125	Cloud Security Skill Set	235
ICTSS00126	Advanced Cyber Incident Threat Detection and Prevention Skill Set	245
ICTSS00127	Cloud Programmer Skill Set	335
ICTSS00128	Network Security and System Protection Skill Set	175
ICTSS00129	DevOps System Administration Skill Set	90
ICTSS00130	Intermediate Digital Skills for Small Business Skill Set	190
ICTSS00131	Introduction to Assistive Technologies Skill Set	85
ICTSS00132	Core Technical IT Skills for Introductory Roles Skill Set	175
ICTSS00133	Core Transferable IT Skills for Introductory Roles Skill Set	120

ICTSS00134	Database Development for Introductory Roles Skill Set	150
ICTSS00135	Database Maintenance for Introductory Roles Skill Set	200
ICTSS00136	Gaming Development for Introductory Roles Skill Set	260
ICTSS00137	Networking for Introductory Roles Skill Set	345
ICTSS00138	Programming Skills for Introductory Roles Skill Set	245
ICTSS00139	Systems Administration Support Skills for Introductory Roles Skill Set	170
ICTSS00140	Web Development for Introductory Roles Skill Set	190
ICTSS00141	Core Technical IT Skills for Intermediate Roles Skill Set	100
ICTSS00142	Core Transferable IT Skills for Intermediate Roles Skill Set	90
ICTSS00143	Networking Skills for Intermediate Roles Skill Set	335
ICTSS00144	Programming Skills for Intermediate Roles Skill Set	325
ICTSS00145	Back End Web Development for Intermediate Roles Skill Set	200
ICTSS00146	Business Analysis for Intermediate Roles Skill Set	140
ICTSS00147	Cloud Architecture for Intermediate Roles Skill Set	195
ICTSS00148	Cloud Engineering for Intermediate Roles Skill Set	225
ICTSS00149	Cyber Security for Intermediate Roles Skill Set	160
ICTSS00150	Database and Data Management for Intermediate Roles Skill Set	165
ICTSS00151	Front End Web Development for Intermediate Roles Skill Set	240
ICTSS00152	Game Art and Design for Intermediate Roles Skill Set	260
ICTSS00153	Game Programming for Intermediate Roles Skill Set	245
ICTSS00154	Systems Administration for Intermediate Roles Skill Set	170
ICTSS00155	Systems Analysis for Intermediate ICT Roles Skill Set	155
ICTSS00156	Telecommunications Network Engineering for Intermediate Roles Skill Set	465
ICTSS00157	Core Technical IT Skills for Advanced Roles Skill Set	105
ICTSS00158	Core Transferable IT Skills for Advanced Roles Skill Set	150
ICTSS00159	Data Management Information Skills for Advanced Roles Skill Set	220
ICTSS00160	Cyber Security for Advanced Roles Skill Set	175

ICTSS00161	Full Stack Web Development for Advanced Roles Skill Set	230
ICTSS00162	Programming Skills for Advanced Roles Skill Set	200
ICTSS00163	IT Strategy and Organisational Development for Advanced Roles Skill Set	145
ICTSS00164	Systems Development and Analysis for Advanced Roles Skill Set	165
ICTSS00165	Telecommunications Network Engineering for Advanced Roles Skill Set	400
ICTSS00166	Application Development Specialist Skill Set	310
ICTSS00167	Basic Application Development Programmer Skill Set	275
ICTSS00168	Basic Web Development Specialist Skill Set	140
ICTSS00169	Certified Network Associate Technology Specialist Skill Set	355
ICTSS00170	Certified Network Professional Specialist - Voice and Wireless Skill Set	210
ICTSS00171	Security and Network Architect Specialist Skill Set	150
ICTSS00172	Certified Technology Specialist - Graphical User Interfaces Skill Set	120
ICTSS00173	Certified Web Design Specialist Skill Set	190
ICTSS00174	Hardware Technician Skill Set	175
ICTSS00175	Internetworking Systems Coordinator - Administrator Skill Set	275
ICTSS00176	Interactive Content Specialist Skill Set	140
ICTSS00177	System and Hardware Technician Skill Set	240
ICTSS00178	System and Network Plus Technician Skill Set	180
ICTSS00179	Virtualisation Specialist Skill Set	170
ICTSS00180	Visual Communications Specialist Skill Set	100
ICTSS00181	Website Administration Specialist Skill Set	145
ICTSS00182	Enterprise Desktop Virtualisation Specialist Skill Set	220
ICTSS00183	Enterprise Server Virtualisation Specialist Skill Set	280
ICTSS00184	Advanced ICT Sustainability Skill Set	175
ICTSS00185	Basic ICT Sustainability Skill Set	100
ICTSS00186	Civil Works - Installation of Pit and Pipe and FDH Skill Set	265
ICTSS00187	Commercial Digital Television Antenna Systems Installation Skill Set	265

ICTSS00188	Network Designer and Installation Skill Set	225
ICTSS00189	Digital Antenna System and Component Installation Skill Set	225
ICTSS00190	Convergence Installation in Small to Medium Networks Skill Set	260
ICTSS00191	Wireless LAN and IP Network Installation Skill Set	285

Units of Competency and Nominal Hours

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

National Code	National Title	Nominal Hours
ICTAII401	Identify opportunities to apply artificial intelligence, machine learning and deep learning	35
ICTAII501	Automate work tasks using machine learning	55
ICTAII502	Train and evaluate machine learning models	55
ICTAII503	Build natural language processing models and pipelines	55
ICTAUT401	Design business process automation solutions	35
ICTAUT402	Apply robotic desktop automation	55
ICTAUT403	Conduct software quality assurance testing	25
ICTAUT501	Manage robotic process automation	55
ICTAUT502	Evaluate automated industrial manufacturing processes	70
ICTBWN302	Install optical fibre splitters in fibre distribution hubs	35
ICTBWN303	Install lead-in module and cable for fibre to the premises	45
ICTBWN306	Use radio frequency measuring instruments	35
ICTBWN307	Use optical measuring instruments	35
ICTBWN308	Work safely on live optical fibre installations	35
ICTBWN309	Perform tests on optical communication system and components	35
ICTCBL205	Joint metallic conductor cable on customer premises	80
ICTCBL206	Alter services to existing cable system	80
ICTCBL210	Install a telecommunications service to a building	50
ICTCBL211	Install an above ground equipment enclosure	60
ICTCBL212	Erect aerial cable supports	60
ICTCBL219	Apply safe technical work practices for cabling registration when configuring an ADSL circuit	35
ICTCBL238	Install, maintain and modify customer premises communications cabling: ACMA Lift Rule	60
ICTCBL239	Install customer cable support systems	60

ICTCBL240	Place and secure customer cable	60
ICTCBL241	Terminate metallic conductor customer cable	60
ICTCBL242	Install functional and protective telecommunications earthing system	80
ICTCBL246	Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule	55
ICTCBL247	Install, maintain and modify customer premises communications cabling: ACMA Open Rule	60
ICTCBL248	Install and terminate hard-line coaxial cable	35
ICTCBL249	Haul underground cable for installation and maintenance work	35
ICTCBL250	Haul and fix aerial cable	35
ICTCBL251	Install aerial and underground cable lead-ins	25
ICTCBL252	Joint and terminate coaxial cable	60
ICTCBL253	Construct underground telecommunications infrastructure	60
ICTCBL254	Joint metallic conductor cable in access network	60
ICTCBL301	Install, terminate and certify structured cabling installation	30
ICTCBL303	Install and terminate coaxial cable	20
ICTCBL305	Hand over cable systems and equipment	60
ICTCBL306	Locate and identify cable system faults	60
ICTCBL311	Install systems and equipment on customer premises	60
ICTCBL313	Modify and cutover cable	45
ICTCBL314	Install network cable equipment	60
ICTCBL316	Install ribbon fibre cable in the FTTX distribution network	55
ICTCBL319	Rearrange large size copper cable	35
ICTCBL320	Jumper metallic conductor cable in the access network	25
ICTCBL322	Install, test and terminate optical fibre cable on customer premises	35
ICTCBL323	Test cables and systems on customer premises	35
ICTCBL324	Cut over new systems and equipment on customer premises	80
ICTCBL325	Maintain cable network	40
ICTCBL326	Cut over metallic conductor cable in the access network	30

ICTCBL329	Install underground cable for communications applications	55
ICTCBL330	Splice and terminate optical fibre cable for telecommunications projects	35
ICTCBL331	Conduct basic identification and fault-finding within cabling networks and customer equipment	45
ICTCBL332	Locate, identify and rectify copper cable faults	35
ICTCBL333	Install aerial cable for communications applications	35
ICTCBL334	Install underground enclosures and conduit	60
ICTCBL335	Construct aerial cable supports	60
ICTCBL336	Install and cut over metallic conductor cable to access network cabinet	35
ICTCBL401	Prepare design drawings and specification for a cable installation	120
ICTCBL403	Supervise cabling project	100
ICTCBL404	Test cable bearers	80
ICTCBL405	Remotely locate and identify cable network faults	60
ICTCLD301	Evaluate characteristics of cloud computing solutions and services	35
ICTCLD401	Configure cloud services	55
ICTCLD501	Develop cloud disaster recovery plans	35
ICTCLD502	Design and implement highly-available cloud infrastructure	70
ICTCLD503	Implement web-scale cloud infrastructure	35
ICTCLD504	Improve cloud-based infrastructure	55
ICTCLD505	Implement cloud infrastructure with code	70
ICTCLD506	Implement virtual network in cloud environments	55
ICTCLD507	Build and deploy resources on cloud platforms	55
ICTCLD508	Manage infrastructure in cloud environments	45
ICTCLD509	Manage cloud identity and access	55
ICTCLD510	Manage cloud threat detection systems	55
ICTCLD511	Protect cloud infrastructure and data	55
ICTCLD512	Respond to cloud security incidents	70
ICTCLD513	Develop cloud-based microservices architecture using containers	75

ICTCLD514	Create and test cloud-based serverless applications	65
ICTCLD515	Build and deploy cloud-based applications using CI and CD pipelines	65
ICTCLD601	Develop cloud computing strategies for businesses	35
ICTCLD602	Manage information security compliance of cloud service deployment	35
ICTCLD603	Design hybrid cloud-based network architectures	55
ICTCLD604	Manage data in cloud environments	55
ICTCMP201	Organise and monitor cabling to ensure compliance with regulatory and industry standards	40
ICTCMP203	Perform restricted customer premises broadband cabling work: ACMA Restricted Rule	20
ICTCMP502	Conduct radio communications site audits	40
ICTCYS401	Design and implement network security infrastructure for an organisation	55
ICTCYS402	Identify and confirm cyber security incidents	35
ICTCYS403	Plan and implement information security strategies for an organisation	35
ICTCYS404	Run vulnerability assessments for an organisation	55
ICTCYS405	Develop cyber security incident response plans	55
ICTCYS406	Respond to cyber security incidents	35
ICTCYS407	Gather, analyse and interpret threat data	35
ICTCYS408	Research and source cryptocurrency technologies for organisational needs	25
ICTCYS601	Create cyber security standards for organisations	35
ICTCYS602	Implement cyber security operations	35
ICTCYS603	Undertake penetration testing for organisations	70
ICTCYS604	Implement best practices for identity management	35
ICTCYS606	Evaluate an organisation's compliance with cyber security standards and law	35
ICTCYS607	Acquire digital forensic data	70
ICTCYS608	Perform cyber security risk assessments	35
ICTCYS609	Evaluate threats and vulnerabilities of IoT devices	35
ICTCYS610	Protect critical infrastructure for organisations	35
ICTCYS611	Configure security devices for organisations	70

ICTCYS612	Design and implement virtualised cyber security infrastructure for organisations	70
ICTCYS613	Utilise design methodologies for security architecture	35
ICTCYS614	Analyse cyber security insider risks and threats and devise recommendations	70
ICTCYS615	Detect and respond to cyber security insider risks and threats	70
ICTDAT401	Evaluate organisational compliance with data ethics legislation	35
ICTDAT402	Clean and verify data	45
ICTDAT501	Gather, analyse and verify data from different source inputs	55
ICTDAT502	Conduct significance tests	55
ICTDAT503	Use unsupervised learning for clustering	55
ICTDAT601	Develop data integration strategies	40
ICTDAT602	Review data lifecycles	35
ICTDAT603	Assess advanced data processes	45
ICTDBS407	Monitor physical database implementation	20
ICTDBS413	Determine database requirements	35
ICTDBS414	Complete database backup and restore	25
ICTDBS415	Build a database	30
ICTDBS416	Create basic relational databases	40
ICTDBS417	Identify and resolve common database performance problems	25
ICTDBS418	Monitor and administer databases	25
ICTDBS503	Create a data warehouse	30
ICTDBS505	Monitor and improve knowledge management systems	30
ICTDBS506	Design databases	50
ICTDBS507	Integrate databases with websites	25
ICTDBS604	Build data warehouses	80
ICTDBS605	Develop knowledge management strategies	80
ICTDBS606	Determine database functionality and scalability	30
ICTDMT404	Create visual design components for digital media	50

ICTDMT405	Produce interactive animations	60
ICTDMT406	Produce and edit digital images	40
ICTDMT407	Incorporate video assets into media presentations	50
ICTDRE301	Install digital reception equipment	50
ICTDRE302	Locate and rectify digital reception equipment faults	40
ICTDRE303	Install a complex digital reception system	50
ICTDRE305	Develop integrated digital reception systems	35
ICTDRE308	Install a cable broadband multi-dwelling unit system	35
ICTDRE314	Design communications wiring systems for customer premises	35
ICTDRE401	Integrate customer digital reception equipment	40
ICTDRE402	Integrate data delivery modes	25
ICTDSN401	Design digital user interfaces	55
ICTDSN402	Develop digital user interfaces	55
ICTDSN403	Apply innovative thinking and practices in digital environments	55
ICTEDU301	Train customers in new technology	40
ICTGAM304	Develop three-dimensional (3D) models for digital games	50
ICTGAM305	Apply simple textures and shading to three-dimensional (3D) models for digital games	50
ICTGAM306	Review and apply traditional animation principles	60
ICTGAM418	Use simple modelling for animation	40
ICTGAM420	Produce interactive games	60
ICTGAM421	Identify and apply games design and game play principles	40
ICTGAM422	Create design documents for interactive games	30
ICTGAM423	Apply artificial intelligence in game development	60
ICTGAM424	Develop story and content in digital games	30
ICTGAM425	Create visual design components in interactive games	50
ICTGAM426	Write narrative scripts for interactive games	60
ICTGAM427	Use 3-D software interface and toolsets	40

ICTGAM428	Create 3-D characters for interactive games	50
ICTGAM429	Develop 3-D components for interactive games	50
ICTGAM430	Design interactive media	40
ICTGAM431	Design and create 3-D digital models	50
ICTGAM432	Create audio for digital games	50
ICTGAM433	Prepare and complete image rendering processes	50
ICTGAM532	Create design concepts for digital games and 3-D media	30
ICTGAM533	Create complex 3-D interactive games	60
ICTGAM534	Manage interactive media productions	40
ICTGAM535	Develop complex 3-D software for games and interactive media	55
ICTGAM536	Design interactive 3-D applications for scientific and mathematical modelling	60
ICTGAM537	Prepare games for different platforms and delivery modes	50
ICTGAM538	Manage testing of games and interactive media	30
ICTGAM539	Create and implement designs for 3-D games environments	50
ICTGAM540	Design and create models for 3-D and digital effects environments	50
ICTGAM541	Design and create advanced particles, fluids and bodies for 3-D digital effects	50
ICTGAM542	Animate 3-D characters for digital games	40
ICTGAM543	Produce digital animation sequences	60
ICTGAM544	Animate physical attributes of models and elements	30
ICTGAM545	Manage technical art and rigging in 3-D animations	50
ICTGAM546	Create and combine 3-D digital games and components	30
ICTGAM547	Create interactive 3-D environments for digital games	40
ICTGAM548	Complete digital editing for 3-D and digital effects environments	20
ICTGAM549	Collaborate in design of 3-D game levels and environments	40
ICTGAM550	Integrate multiple data sources into interactive 3-D environments	30
ICTGAM551	Apply digital texturing for the 3-D environment in digital games	30
ICTGAM552	Create complex 3-D characters for games	60

ICTGAM553	Integrate database with online games	30
ICTGAM554	Create games for mobile devices	60
ICTGAM555	Analyse business opportunities in the digital games environments	30
ICTGAM556	Develop and implement physics in 3-D digital games	40
ICTGAM557	Complete compositing to create elements for 3-D and digital effects environments	40
ICTICT213	Use computer operating systems and hardware	60
ICTICT214	Operate application software packages	60
ICTICT215	Operate digital media technology packages	40
ICTICT216	Design and create basic organisational documents	40
ICTICT219	Interact and resolve queries with ICT clients	20
ICTICT221	Identify and use specific industry standard technologies	40
ICTICT222	Research and share ICT solutions for Indigenous users	20
ICTICT223	Install software applications	15
ICTICT224	Integrate commercial computing packages	25
ICTICT225	Operate accounting applications	30
ICTICT226	Operate simple database applications	35
ICTICT309	Create ICT user documentation	20
ICTICT310	Identify and use industry specific technologies	60
ICTICT311	Customise packaged software applications	40
ICTICT312	Use advanced features of applications	35
ICTICT313	Identify IP, ethics and privacy policies in ICT environments	45
ICTICT314	Connect internal hardware components	30
ICTICT315	Implement system software changes	15
ICTICT316	Implement new technology	25
ICTICT317	Maintain standard operating environments	20
ICTICT318	Validate test cases and develop proof of concepts	25
ICTICT424	Address cyber security requirements	70

ICTICT425	Implement WHS, environmental sustainability and anti-discrimination practices in an ICT workplace	45
ICTICT426	Identify and evaluate emerging technologies and practices	55
ICTICT427	Identify, evaluate and apply current industry-specific technologies to meet organisational needs	60
ICTICT428	Select cloud storage solutions	35
ICTICT429	Determine and confirm client business requirements	35
ICTICT430	Apply software development methodologies	20
ICTICT431	Use online tools for learning	30
ICTICT432	Develop detailed technical design	55
ICTICT433	Build graphical user interfaces	20
ICTICT434	Maintain website information standards	20
ICTICT435	Create technical documentation	20
ICTICT436	Develop macros and templates for clients using standard products	55
ICTICT437	Conduct post-implementation ICT system reviews	20
ICTICT438	Select, configure and deploy software and hardware testing tools	35
ICTICT440	Develop service level agreements	35
ICTICT441	Provide one-to-one instructions	20
ICTICT443	Work collaboratively in the ICT industry	30
ICTICT444	Develop client user interfaces	40
ICTICT445	Connect and configure devices and hardware components	40
ICTICT446	Apply ICT service management principles	20
ICTICT447	Work effectively in agile environments	55
ICTICT448	Prepare electronic portfolios of work	30
ICTICT449	Use version control systems in development environments	25
ICTICT450	Identify and use applications for a distributed ledger	45
ICTICT451	Comply with IP, ethics and privacy policies in ICT environments	55
ICTICT452	Support the implementation of assistive technologies	30
ICTICT453	Evaluate accessibility of organisational systems, programs and software	25

ICTICT454	Assess organisational systems using assistive technologies	30
ICTICT517	Match ICT needs with the strategic direction of the organisation	25
ICTICT518	Research and review hardware technology options for organisations	20
ICTICT519	Develop detailed component specifications from project specifications	35
ICTICT520	Confirm transition strategy for new systems	10
ICTICT521	Select new technology supported business model	20
ICTICT522	Evaluate vendor products and equipment	20
ICTICT523	Gather data to identify business requirements	30
ICTICT524	Determine ICT strategies and solutions for organisations	25
ICTICT525	Identify and manage the implementation of industry specific technologies	60
ICTICT526	Verify client business requirements	40
ICTICT527	Develop and maintain blockchain solutions	70
ICTICT528	Deploy smart contracts	35
ICTICT529	Organise and lead agile projects	55
ICTICT530	Design user experience solutions	70
ICTICT531	Test network using virtual instruments	60
ICTICT532	Apply IP, ethics and privacy in ICT environments	35
ICTICT533	Conduct quality audit of IT system design specifications	20
ICTICT608	Interact with clients on a business level	40
ICTICT611	Develop ICT strategic business plans	25
ICTICT612	Develop contracts and manage contract performance	25
ICTICT613	Manage the use of development methodologies	30
ICTICT614	Identify and implement business innovation	60
ICTICT615	Implement knowledge management strategies	30
ICTICT616	Develop communities of practice	30
ICTICT617	Lead the evaluation and implementation of current industry specific technologies	80
ICTICT618	Manage IP, ethics and privacy in ICT environments	30

ICTICT818	Develop knowledge management strategies	80
ICTICT819	Lead analysis of information and communications technology business strategy	80
ICTICT822	Manage automated ICT system applications	45
ICTIOT501	Install IoT devices and networks	45
ICTIOT502	Program IoT devices	65
ICTIOT503	Design and test IoT devices and networks	35
ICTNPL402	Plan the deployment of access network architectures	50
ICTNPL410	Plan the telecommunications access network for an estate	80
ICTNPL412	Apply business acumen to network planning	45
ICTNPL413	Evaluate networking regulations and legislation for the telecommunications industry	60
ICTNWK307	Provide network systems administration	20
ICTNWK308	Determine and action network problems	30
ICTNWK309	Configure and administer network operating systems	40
ICTNWK310	Administer network peripherals	20
ICTNWK311	Install and test network protocols	30
ICTNWK420	Install and configure virtual machines	50
ICTNWK421	Install, configure and test network security	50
ICTNWK422	Install and manage servers	20
ICTNWK423	Manage network and data integrity	80
ICTNWK424	Install and operate small enterprise branch networks	60
ICTNWK425	Build small wireless local area networks	20
ICTNWK426	Install and configure client-server applications and services	40
ICTNWK427	Configure desktop environments	40
ICTNWK428	Create scripts for networking	40
ICTNWK429	Install hardware to networks	40
ICTNWK430	Deploy software to networked computers	35
ICTNWK431	Create network documentation	40

ICTNWK432	Build an enterprise wireless network	20
ICTNWK433	Install backbone technologies in a local area network	40
ICTNWK434	Identify and implement industry standard virtualisation technologies	35
ICTNWK435	Create secure virtual private networks	20
ICTNWK529	Install and manage complex ICT networks	55
ICTNWK536	Plan, implement and test enterprise communication solutions	80
ICTNWK537	Implement secure encryption technologies	20
ICTNWK538	Install and maintain valid authentication processes	25
ICTNWK539	Design and implement integrated server solutions	50
ICTNWK540	Design, build and test network servers	45
ICTNWK541	Configure, verify and troubleshoot WAN links and IP services	90
ICTNWK542	Install, operate and troubleshoot medium enterprise routers	120
ICTNWK543	Install, operate and troubleshoot medium enterprise switches	90
ICTNWK544	Design and implement a security perimeter for ICT networks	60
ICTNWK545	Develop, implement and evaluate systems and applications security	55
ICTNWK546	Manage network security	70
ICTNWK547	Manage system security on operational systems	45
ICTNWK548	Model preferred system solutions	35
ICTNWK549	Design ICT security frameworks	25
ICTNWK550	Design ICT system security controls	30
ICTNWK551	Build decks using wireless markup language	30
ICTNWK552	Install and configure network access storage devices	40
ICTNWK553	Configure enterprise virtual computing environments	60
ICTNWK554	Manage enterprise virtual computing environments	60
ICTNWK555	Determine best-fit topologies for local networks	25
ICTNWK556	Identify and resolve network problems	30
ICTNWK557	Configure and manage advanced virtual computing environments	35

ICTNWK558	Monitor and troubleshoot virtual computing environments	35
ICTNWK559	Install an enterprise virtual computing environment	50
ICTNWK560	Determine best-fit topologies for wide area networks	25
ICTNWK561	Design enterprise wireless local area networks	25
ICTNWK562	Configure internet gateways	20
ICTNWK612	Plan and manage troubleshooting advanced integrated IP networks	120
ICTNWK615	Design and configure desktop virtualisation	70
ICTNWK618	Design and implement a security system	90
ICTNWK619	Plan, configure and test advanced server-based security	80
ICTNWK620	Design and implement wireless network security	60
ICTNWK621	Configure network devices for a secure network infrastructure	40
ICTNWK622	Configure and manage intrusion prevention system on network sensors	40
ICTNWK623	Manage ICT security	70
ICTNWK624	Configure advanced internetwork routing solutions	110
ICTNWK625	Plan and configure advanced internetwork switching solutions	120
ICTNWK627	Implement voice applications over secure wireless networks	40
ICTNWK628	Design and build integrated VoIP networks	45
ICTNWK629	Configure and manage storage area networks	45
ICTOPN403	Prepare activity plans and specifications for a fibre to the x installation	55
ICTOPN404	Test optical communications systems and components	45
ICTOPN405	Install and test a dense wavelength division multiplexing system	55
ICTOPN507	Plan and configure dense wavelength division multiplexing optical networks	55
ICTOPN508	Perform acceptance and commissioning tests on optical networks	45
ICTOPN509	Plan for optical system upgrades	55
ICTOPN510	Test and commission dense wavelength division multiplexing transmission systems	50
ICTOPN511	Test performance of specialised optical devices	45
ICTOPN512	Analyse and integrate specialised optical devices	60

ICTOPN605	Manage optical ethernet transmission	55
ICTOPN606	Manage dense wavelength division multiplexing transmission systems	55
ICTOPN607	Design dense wavelength division multiplexing systems	45
ICTOPN608	Analyse optical transmission systems	45
ICTPMG201	Prepare site for support installation	60
ICTPMG202	Plan, organise and undertake work activities	30
ICTPMG301	Contribute as part of an IT project management team	70
ICTPMG402	Schedule installation of customer premises equipment	40
ICTPMG403	Manage the delivery of network infrastructure	60
ICTPMG411	Support small scale ICT projects	60
ICTPMG505	Manage ICT projects	80
ICTPMG506	Prepare network project briefs	120
ICTPMG612	Manage ICT project initiation	40
ICTPMG613	Manage ICT project planning	45
ICTPMG614	Manage ICT project delivery	40
ICTPMG615	Manage ICT project closure	40
ICTPMG616	Manage ICT project systems implementation	40
ICTPMG617	Plan and direct complex ICT projects	80
ICTPRG302	Apply introductory programming techniques	40
ICTPRG429	Maintain open-source code programs	20
ICTPRG430	Apply introductory object-oriented language skills	60
ICTPRG431	Apply query language in relational databases	55
ICTPRG432	Develop data-driven applications	60
ICTPRG433	Test software developments	50
ICTPRG434	Automate processes	35
ICTPRG435	Write scripts for software applications	40
ICTPRG436	Develop mobile applications	50

ICTPRG437	Build a user interface	50
ICTPRG438	Configure and maintain databases	50
ICTPRG439	Use pre-existing components	35
ICTPRG440	Apply introductory programming skills in different languages	60
ICTPRG441	Apply skills in object-oriented design	35
ICTPRG442	Apply mathematical techniques for software development	20
ICTPRG443	Apply intermediate programming skills in different languages	70
ICTPRG444	Analyse software requirements	55
ICTPRG446	Prepare software development review	25
ICTPRG447	Use extensible markup language	50
ICTPRG530	Manage projects using software management tools	60
ICTPRG531	Prepare for application development using current methods	25
ICTPRG532	Apply advanced object-oriented language skills	80
ICTPRG533	Debug and monitor applications	40
ICTPRG534	Deploy applications to production environments	40
ICTPRG535	Build advanced user interfaces	60
ICTPRG536	Design application architecture	40
ICTPRG537	Implement security for applications	50
ICTPRG538	Create mashups	50
ICTPRG540	Maintain custom software	35
ICTPRG541	Monitor and support data conversion to new ICT systems	10
ICTPRG542	Review developed software	25
ICTPRG543	Develop integration blueprint for ICT systems	20
ICTPRG544	Install, test and evaluate pilot version of ICT systems	20
ICTPRG545	Monitor system pilots	20
ICTPRG546	Validate application designs against specifications	40
ICTPRG547	Apply advanced programming skills in another language	80

ICTPRG548	Develop high-level object-oriented class specifications	45
ICTPRG549	Apply intermediate object-oriented language skills	50
ICTPRG550	Perform ICT data conversions	20
ICTPRG551	Apply testing techniques for software development	40
ICTPRG553	Create and develop REST APIs	55
ICTPRG554	Manage data persistence using noSQL data stores	70
ICTPRG555	Implement Object Relational Mapping Framework for data persistence	55
ICTPRG556	Implement and use a model view controller framework	65
ICTPRG557	Develop applications using agile methods	35
ICTPRG603	Develop advanced mobile multi-touch applications	80
ICTPRG605	Manage development of technical solutions from business specifications	35
ICTPRG614	Create cloud computing services	60
ICTRFN201	Install a satellite antenna	40
ICTRFN202	Install a terrestrial antenna	40
ICTRFN301	Install a radio communications antenna and feedline	60
ICTRFN304	Construct and test a radio communications device	40
ICTRFN305	Operate and maintain radio communications technical instruments and field equipment	40
ICTRFN402	Select antenna system for radio communications	25
ICTRFN405	Install radio communications base station equipment	45
ICTRFN406	Maintain hybrid fibre coaxial broadband cable network	45
ICTRFN407	Conduct radio frequency measurements	40
ICTRFN504	Test cellular handset enhancements and international roaming agreements	50
ICTRFN505	Test and measure cellular phone and network equipment performance	50
ICTRFN506	Evaluate radio frequency signal coverage plots	40
ICTRFN603	Monitor the capacity of and recommend changes to cellular mobile networks	60
ICTRFN804	Produce radio link budgets	45
ICTRFN805	Analyse cellular mobile network systems	60

ICTRFN806	Analyse satellite communications systems	55
ICTSAD402	Develop and present ICT feasibility reports	25
ICTSAD501	Model data objects	30
ICTSAD502	Model data processes	30
ICTSAD507	Design and implement quality assurance processes for business solutions	30
ICTSAD508	Develop technical requirements for business solutions	30
ICTSAD509	Produce ICT feasibility reports	30
ICTSAD510	Manage risks when implementing new technologies	25
ICTSAD604	Manage and communicate ICT solutions	40
ICTSAD608	Perform ICT-focused enterprise analysis	40
ICTSAD609	Plan and monitor business analysis activities in an ICT environment	40
ICTSAD610	Analyse stakeholder requirements	40
ICTSAD611	Manage assessment and validation of ICT solutions	40
ICTSAD612	Implement and maintain uses of containerisation	45
ICTSAD613	Install and configure container orchestration services	45
ICTSAD614	Lead ICT requirements elicitation	35
ICTSAS210	Update and maintain hardware, software and documentation inventories	15
ICTSAS211	Develop solutions for basic ICT malfunctions and problems	20
ICTSAS212	Record the requirements of client support requests	15
ICTSAS213	Maintain the integrity of ICT systems	20
ICTSAS214	Protect devices from spam and destructive software	10
ICTSAS215	Protect and secure information assets	15
ICTSAS216	Maintain ICT equipment and replace consumables	15
ICTSAS217	Connect a home based local wireless network	30
ICTSAS218	Obtain and connect hardware peripherals	25
ICTSAS305	Provide ICT advice to clients	35
ICTSAS308	Run standard diagnostic tests	15

ICTSAS309	Maintain and repair ICT equipment and software	25
ICTSAS310	Install, configure and secure a small office or home office network	50
ICTSAS311	Maintain computer hardware	20
ICTSAS312	Provide basic system administration	25
ICTSAS428	Hand over ICT system components to clients	20
ICTSAS432	Identify and resolve client ICT problems	35
ICTSAS433	Update ICT client support procedures and assist with policy development	15
ICTSAS434	Action change requests and present updated ICT system to clients	45
ICTSAS435	Resolve system faults on a live system	35
ICTSAS436	Evaluate ICT system status	20
ICTSAS437	Optimise ICT system performance	30
ICTSAS438	Implement maintenance procedures	10
ICTSAS439	Analyse ICT system capacity and implement enhancements	50
ICTSAS440	Monitor and administer security of ICT systems	20
ICTSAS441	Support ICT system software	45
ICTSAS442	Provide first-level remote help desk support	35
ICTSAS443	Support operating system users and troubleshoot applications	20
ICTSAS444	Repair operating systems boot up procedures	40
ICTSAS445	Configure and troubleshoot operating system software	40
ICTSAS446	Fault find and troubleshoot ICT equipment, hardware and software problems	40
ICTSAS502	Establish and maintain client user liaison	20
ICTSAS506	Update ICT system operational procedures	30
ICTSAS512	Review and manage delivery of maintenance services	25
ICTSAS518	Install and upgrade operating systems	50
ICTSAS519	Perform systems tests	25
ICTSAS520	Develop detailed test plans	30
ICTSAS521	Perform integration tests	25

ICTSAS522	Manage the testing process	15
ICTSAS523	Perform stress and load tests on integrated platforms	25
ICTSAS524	Develop, implement and evaluate an incident response plan	25
ICTSAS525	Develop and conduct client acceptance tests	35
ICTSAS526	Review and update disaster recovery and contingency plans	30
ICTSAS527	Manage client problems	20
ICTSAS528	Review and develop ICT maintenance strategies	35
ICTSAS529	Prioritise ICT change requests	15
ICTSAS530	Use network tools	45
ICTSAS602	Implement change management processes	35
ICTSMB401	Set up and operate a contractor business	40
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
ICTSUS502	Install and test virtual infrastructure	70
ICTSUS603	Integrate sustainability in ICT planning and design projects	50
ICTSUS604	Prepare business cases for sustainability and competitive advantage in ICT projects	50
ICTSUS811	Conduct and manage life cycle assessments for sustainability	55
ICTSUS812	Lead applied research in ICT sustainability	55
ICTTCR203	Use safe rigging practices to climb and perform rescues on telecommunications network structures	40
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
ICTTEN208	Use electrical skills when working with telecommunications networks	35

ICTTEN210	Install underground telecommunications infrastructure	20
ICTTEN211	Work effectively in a telecommunications network environment	25
ICTTEN301	Provide infrastructure for telecommunications network equipment	80
ICTTEN310	Remove and replace electronic circuit boards in carrier equipment	20
ICTTEN312	Install telecommunications network equipment	80
ICTTEN313	Work on and resolve recurrent network faults	45
ICTTEN315	Determine and apply technologies within a telecommunications system	35
ICTTEN316	Conduct basic tests and analyses of telecommunications copper cabling	45
ICTTEN317	Locate, identify and rectify telecommunications network faults	35
ICTTEN318	Inspect, clean and handle optical fibre cable and connectors	20
ICTTEN320	Commission an electronic unit	60
ICTTEN321	Maintain an electronic system	60
ICTTEN322	Provide infrastructure for telecommunications network customer equipment	55
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
ICTTEN406	Effect changes to existing customer premises equipment systems and equipment	60
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
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
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
ICTTEN432	Identify requirements for customer telecommunications equipment	60
ICTTEN433	Install configuration programs on PC based customer equipment	60
ICTTEN434	Install, configure and test internet protocol networks	45
ICTTEN435	Solve electrical-based telecommunications circuitry and cabling problems	35
ICTTEN519	Design network building projects	120
ICTTEN520	Commission network equipment	120
ICTTEN521	Integrate network systems and equipment	120
ICTTEN522	Cut over new and replacement network equipment	120
ICTTEN523	Locate, diagnose and rectify complex system equipment faults	55
ICTTEN524	Diagnose and organise repair of complex equipment faults	45
ICTTEN525	Install, configure and test local area network switches	55
ICTTEN526	Dimension and design a radio frequency identification system	55
ICTTEN527	Plan wireless mesh networks	55
ICTTEN613	Assess integration of international network equipment into Australian networks	120
ICTTEN614	Conduct network system optimisation and administration	120
ICTTEN615	Manage network traffic	120
ICTTEN616	Rectify client services following network outages and faults	120

ICTTEN617	Manage common channel signalling networks	120
ICTTEN618	Analyse and organise repair of highly complex networks	120
ICTTEN619	Test new software and hardware releases	120
ICTTEN620	Produce and evaluate architecture designs for convergent cellular mobile networks	60
ICTTEN621	Design and configure IP-MPLS networks with virtual private network tunnelling	70
ICTTEN622	Produce ICT network architecture designs	55
ICTTEN623	Design and manage internet protocol TV in a service provider network	55
ICTTEN817	Plan transmission networks	55
ICTTEN818	Align systems with product and technology strategy	35
ICTTEN819	Translate domain and solution architectures into platform requirements and designs	55
ICTTEN820	Manage end to end architectural solutions across multiple domains	55
ICTTEN821	Manage solution architecture and impacts	55
ICTTEN822	Manage application layer solutions	55
ICTTEN823	Manage voice, data and internet protocol network solutions	55
ICTTEN824	Manage network testing strategies	55
ICTTEN825	Investigate applications of cloud networks in network switching	55
ICTTEN826	Evaluate and apply digital signal processing to communication systems	55
ICTTEN827	Produce engineering solutions	55
ICTTEN828	Manage development and application of testing artefacts	55
ICTWEB304	Build simple web pages	50
ICTWEB305	Produce digital images for the web	30
ICTWEB306	Develop web presence using social media	25
ICTWEB430	Produce server-side script for dynamic web pages	60
ICTWEB431	Create and style simple markup language documents	35
ICTWEB432	Design website layouts	40
ICTWEB433	Confirm accessibility of websites	10
ICTWEB434	Transfer content to websites	20

ICTWEB435	Maintain website performance	30
ICTWEB436	Monitor traffic and compile website traffic reports	15
ICTWEB437	Create website testing procedures	20
ICTWEB438	Conduct operational acceptance tests of websites	20
ICTWEB439	Confirm basic website security	20
ICTWEB440	Use web authoring tools	20
ICTWEB441	Produce basic client-side script	40
ICTWEB442	Produce interactive web animation	80
ICTWEB443	Implement search engine optimisations	50
ICTWEB444	Create responsive website layouts	50
ICTWEB445	Implement content management systems	80
ICTWEB446	Integrate social web technologies	40
ICTWEB447	Build basic website using development software and ICT tools	20
ICTWEB448	Confirm website content meets technical protocols and standards	30
ICTWEB449	Confirm website access and useability	15
ICTWEB450	Evaluate and select a web hosting service	15
ICTWEB451	Apply structured query language in relational databases	55
ICTWEB452	Create a markup language document	20
ICTWEB453	Optimise websites for mobile devices	25
ICTWEB513	Build dynamic websites	30
ICTWEB514	Create dynamic web pages	30
ICTWEB517	Create web-based programs	60
ICTWEB518	Build a document using extensible markup language	30
ICTWEB519	Develop complex web page layouts	40
ICTWEB520	Develop complex cascading style sheets	40
ICTWEB521	Customise complex ICT content management systems	80
ICTWEB522	Develop website information architecture	30

ICTWEB523	Manage transactions using site server tools	20
ICTWEB524	Analyse information and assign meta tags	20
ICTWEB525	Implement quality assurance process for websites	20
ICTWEB526	Implement and use web services	50
ICTWEB527	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
ICTWHS204	Follow work health and safety and environmental policy and procedures	35
ICTWHS205	Work safely near power infrastructure at a telecommunications workplace	25
ICTWOR202	Work effectively in the digital and telecommunications industry	20
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
ICTWOR308	Provide customer service to telecommunications customers	35
ICTWOR401	Undertake a civil site survey	40
ICTXRE401	Apply augmented reality solutions in organisations	55
ICTXRE402	Apply virtual reality solutions in organisations	55
ICTXRE403	Design mixed reality solutions	55

Mapping Qualifications

The following table provides an overview of the qualifications from Version 9.1 which replace qualifications from the existing version of the ICT: Information and Communications Technology Training Package.

ICT Current Qualification				ICT Replacement Qualification		
National Code	National Title	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
No changes occurred between ICT v9. & v9.1						

Mapping Skill Sets

The following table provides an overview of the skill sets from Version 9.1 which replace skill sets from the existing version of the ICT: Information and Communications Technology Training Package.

ICT Current Skill Set			E / NE	ICT Replacement Skill Set		
National Code	National Title	Nominal Hours		National Code	National Title	Nominal Hours
ICTSS00106	Introductory Tools and Applications Skill Set (Release 1.00)	195	E	ICTSS00106	Introductory Tools and Applications Skill Set (Release 2.00)	210

Mapping Units of Competency

The following table provides an overview of the units of competency from Version 9.1 which replace units of competency from the existing version of the ICT: 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
			No changes occurred between ICT v9. & v9.1			

Apprenticeships

The following table provides a summary of the apprenticeships that have been affected by changes in this ICT: Information and Communications Technology training package update.

Please refer to the current *Register of Class A and B qualifications* found on the Department of Training and Workforce Development website for the official list of apprenticeships in Western Australia.

National Code	National Title	Apprenticeship	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
No changes occurred between ICT v9. & v9.1							

Traineeships

The following table provides a summary of the traineeships that have been affected by changes in this ICT: Information and Communications Technology training package update.

Please refer to the current *Register of Class A and B qualifications* found on the Department of Training and Workforce Development website for the official list of apprenticeships in Western Australia.

National Code	National Title	Traineeship	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
		No changes occurred between ICT v9. & v9.1					

Pre-Apprenticeships

The following table provides a summary of the pre-apprenticeships that have been affected by changes in this ICT: Information and Communications Technology training package update.

Please refer to the current *list of pre-apprenticeship courses* found on the Jobs and Skills WA website for the official list of pre-apprenticeships in Western Australia.

National Code	National Title	Pre-Apprenticeship	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
			No changes occurred between ICT v9. & v9.1				