Australian Government

ICT40120 Certificate IV in Information Technology

Release 4

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Modification History

Release	Comments
Release 4	This version released with ICT Information and Communications Technology Training Package Version 8.0. • 18 newly created units of competency added to Group H General Electives. • 10 units of competency have been replaced with their relevant superseding unit. The following unit of competency was updated with minor editorial corrections: • ICTICT451 Comply with IP, ethics and privacy policies in ICT environments.
Release 3	This version released with ICT Information and Communications Technology Training Package Version 7.2. Minor updates made to the modification history table, unit grid and packaging rules.
Release 2	Correcting an error and adding the following elective units of competency: • ICTICT425 Implement WHS, environmental sustainability and anti-discrimination practices in an ICT workplace • ICTICT427 Identify, evaluate and apply current industry-specific technologies to meet organisational needs • ICTSAS422 Scope implementation requirements.
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Qualification Description

This qualification reflects the role of individuals who are job ready and competent in a wide range of information and communications technology (ICT) roles and apply a broad range of skills in varied work contexts, using problem solving skills and effective communication with others.

The skills required for these roles may include, but are not restricted to:

- database development: interpreting specifications, technical designs and flow charts, modifying software applications, constructing technical specifications from models and testing, and writing technical documents
- database maintenance: managing, cleaning, storing and verifying organisational data, and evaluating compliance with internal and external data ethics regulations and legislation
- gaming development: creating 2D and 3D modelling and animation software through scripts and storyboards
- networking: installing, configuring and testing networks and servers in organisations
- programming: building, testing and applying basic object-oriented language skills, user interfaces and software developments
- systems administration support: implementing maintenance procedures and support to help troubleshoot system applications
- web development: designing website layouts through textual and visual content transfer, search engine optimisation and simple markup language documents.

Licensing, legislative, regulatory or certification considerations

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Entry Requirements

Nil

Packaging Rules

Total number of units = 20

7 core units plus

13 elective units, of which:

- at least 9 units must be selected from the elective units listed below
- up to 4 units may be selected from the remaining listed elective units or from this or any other currently endorsed training package qualification or accredited course at Australian Qualifications Framework (AQF) Level 3, 4 or 5.

Elective units must be relevant to the work environment and the qualification, maintain the integrity of the AQF alignment, not duplicate the outcome of another unit chosen for the qualification and contribute to a valid, industry-supported vocational outcome.

Units selected from other Training Packages or accredited courses must not duplicate units selected from or available within the ICT Information and Communications Technology Training Package.

Where relevant, the choice of elective units set out in the packaging rules above can serve to provide the qualification with one or more of the following specialisations. The rules to achieve a specialisation are detailed at the qualification end.

- Database development

- Database maintenance
- Gaming development
- Networking
- Programming
- Systems administration support
- Web development

Core units

BSBCRT404 Apply advanced critical thinking to work processes

BSBXCS404 Contribute to cyber security risk management

ICTICT426 Identify and evaluate emerging technologies and practices

ICTICT443 Work collaboratively in the ICT industry

ICTICT451 Comply with IP, ethics and privacy policies in ICT environments

ICTPRG302 Apply introductory programming techniques

ICTSAS432 Identify and resolve client ICT problems

Elective units

Group A Database Development Specialisation

ICTDBS407 Monitor physical database implementation

ICTDBS413 Determine database requirements

ICTDBS415 Build a database

ICTDBS416 Create basic relational databases

ICTDBS418 Monitor and administer databases

Group B Database Maintenance Specialisation

ICTDAT401 Evaluate organisational compliance with data ethics legislation

ICTDAT402 Clean and verify data

ICTDBS414 Complete database backup and restore

ICTDBS417 Identify and resolve common database performance problems

ICTPRG554 Manage data persistence using noSQL data stores

Group C Gaming Development Specialisation

ICTGAM418 Use simple modelling for animation

ICTGAM420 Produce interactive games

ICTGAM421 Identify and apply games design and game play principles

ICTGAM426 Write narrative scripts for interactive games

ICTGAM427 Use 3-D software interface and toolsets

ICTICT433 Build graphical user interfaces

Group D Networking Specialisation

ICTNWK420 Install and configure virtual machines

ICTNWK421 Install, configure and test network security

ICTNWK422 Install and manage servers

ICTNWK423 Manage network and data integrity

ICTNWK424 Install and operate small enterprise branch networks

ICTNWK429 Install hardware to networks

ICTTEN434 Install, configure and test internet protocol networks

Group E Programming Specialisation

ICTICT449 Use version control systems in development environments

ICTPRG430 Apply introductory object-oriented language skills

ICTPRG433 Test software developments

ICTPRG437 Build a user interface

ICTPRG440 Apply introductory programming skills in different languages

Group F Systems Administration Support Specialisation

ICTICT445 Connect and configure devices and hardware components

ICTSAS436 Evaluate ICT system status

ICTSAS438 Implement maintenance procedures

ICTSAS441 Support ICT system software

ICTSAS442 Provide first-level remote help desk support

ICTSAS443 Support operating system users and troubleshoot applications

Group G Web Development Specialisation

ICTWEB431 Create and style simple markup language documents

ICTWEB432 Design website layouts

ICTWEB433 Confirm accessibility of websites

ICTWEB434 Transfer content to websites

ICTWEB443 Implement search engine optimisations

ICTWEB450 Evaluate and select a web hosting service

ICTWEB452 Create a markup language document

Group H General electives

Artificial Intelligence

ICTAII401 Identify opportunities to apply artificial intelligence, machine learning and deep learning

ICTAII501 Automate work tasks using machine learning

ICTAII502 Train and evaluate machine learning models

ICTAII503 Build natural language processing models and pipelines

Assistive Technologies

ICTICT452 Support the implementation of assistive technologies

ICTICT453 Evaluate accessibility of organisational systems, programs and software

ICTICT454 Assess organisational systems using assistive technologies

Automation

ICTAUT401 Design business process automation solutions

ICTAUT402 Apply robotic desktop automation

ICTAUT403 Conduct software quality assurance testing

ICTAUT502 Evaluate automated industrial manufacturing processes

Cloud Computing

ICTCLD301 Evaluate characteristics of cloud computing solutions and services

ICTCLD401 Configure cloud services

ICTICT428 Select cloud storage solutions

Cyber Security Incident Response

ICTCYS401 Design and implement network security infrastructure for an organisation

ICTCYS402 Identify and confirm cyber security incidents

ICTCYS403 Plan and implement information security strategies for an organisation

ICTCYS404 Run vulnerability assessments for an organisation

ICTCYS405 Develop cyber security incident response plans

ICTCYS406 Respond to cyber security incidents

ICTCYS407 Gather, analyse and interpret threat data

ICTICT424 Address cyber security requirements

ICTSAS214 Protect devices from spam and destructive software

ICTSAS440 Monitor and administer security of ICT systems

Data and Information Management

ICTDBS503 Create a data warehouse

ICTICT450 Identify and use applications for a distributed ledger

ICTPRG438 Configure and maintain databases

ICTSAS215 Protect and secure information assets

Design Thinking

ICTDSN401 Design digital user interfaces

ICTDSN402 Develop digital user interfaces

ICTDSN403 Apply innovative thinking and practices in digital environments

Digital Media

CUAANM412 Create digital visual effects

CUACAM311 Shoot material for screen productions

CUAPOS411 Edit digital content for fast turnaround

CUAPOS412 Manage media assets

CUAPPM417 Create storyboards

CUASOU212 Perform basic sound editing

CUASOU304 Prepare audio assets

ICTDMT404 Create visual design components for digital media

ICTDMT405 Produce interactive animations

ICTDMT406 Produce and edit digital images

Extended Reality

ICTXRE401 Apply augmented reality solutions in organisations

ICTXRE402 Apply virtual reality solutions in organisations

ICTXRE403 Design mixed reality solutions

Gaming Art and Development

ICTGAM422 Create design documents for interactive games

ICTGAM423 Apply artificial intelligence in game development

ICTGAM424 Develop story and content in digital games

ICTGAM425 Create visual design components in interactive games

ICTGAM428 Create 3-D characters for interactive games

ICTGAM429 Develop 3-D components for interactive games

ICTGAM430 Design interactive media

ICTGAM431 Design and create 3-D digital models

ICTGAM432 Create audio for digital games

ICTGAM433 Prepare and complete image rendering processes

IT Support Services

ICTICT425 Implement WHS, environmental sustainability and anti-discrimination practices in an ICT workplace

ICTICT427 Identify, evaluate and apply current industry-specific technologies to meet organisational needs

ICTICT429 Determine and confirm client business requirements

ICTICT431 Use online tools for learning

ICTICT436 Develop macros and templates for clients using standard products

ICTICT441 Provide one-to-one instructions

ICTICT446 Apply ICT service management principles

ICTSAS428 Hand over ICT system components to clients

ICTSAS433 Update ICT client support procedures and assist with policy development

ICTSAS434 Action change requests and present updated ICT system to clients

ICTSAS446 Fault find and troubleshoot ICT equipment, hardware and software problems

IT Work Ready Skills

BSBPEF402 Develop personal work priorities

ICTCYS408 Research and source cryptocurrency technologies for organisational needs

ICTICT435 Create technical documentation

ICTICT440 Develop service level agreements

ICTICT448 Prepare electronic portfolios of work

ICTSAD402 Develop and present ICT feasibility reports

Networking

ICTCLD301 Evaluate characteristics of cloud computing solutions and services

ICTNWK425 Build small wireless local area networks

ICTNWK426 Install and configure client-server applications and services

ICTNWK427 Configure desktop environments

ICTNWK428 Create scripts for networking

ICTNWK430 Deploy software to networked computers

ICTNWK431 Create network documentation

ICTNWK432 Build an enterprise wireless network

ICTNWK433 Install backbone technologies in a local area network

ICTNWK435 Create secure virtual private networks

Project Management

ICTICT447 Work effectively in agile environments

ICTPMG411 Support small scale ICT projects

Programming

ICTPRG429 Maintain open-source code programs

ICTPRG431 Apply query language in relational databases

ICTPRG432 Develop data-driven applications

ICTPRG434 Automate processes

ICTPRG435 Write scripts for software applications

ICTPRG436 Develop mobile applications

ICTPRG439 Use pre-existing components

ICTPRG441 Apply skills in object-oriented design

ICTPRG442 Apply mathematical techniques for software development

ICTPRG443 Apply intermediate programming skills in different languages

ICTPRG444 Analyse software requirements

ICTPRG446 Prepare software development review

ICTPRG447 Use extensible markup language

ICTSAD501 Model data objects

ICTSAD502 Model data processes

Systems and Software Design

ICTICT430 Apply software development methodologies

ICTICT432 Develop detailed technical design

ICTICT438 Select, configure and deploy software and hardware testing tools

ICTICT444 Develop client user interfaces

ICTNWK434 Identify and implement industry standard virtualisation technologies

ICTSAS445 Configure and troubleshoot operating system software

ICTTEN410 Locate, diagnose and rectify faults

ICTTEN417 Install, configure and test a router

ICTTEN418 Install and test a radio frequency identification system

ICTTEN419 Implement and troubleshoot enterprise routers and switches

ICTTEN420 Design, install and configure an internetwork

ICTTEN525 Install, configure and test a local area network switch

Systems Development and Maintenance

ICTICT434 Maintain website information standards

ICTICT437 Conduct post-implementation ICT system reviews

ICTSAS309 Maintain and repair ICT equipment and software

ICTSAS435 Resolve system faults on a live system

ICTSAS437 Optimise ICT system performance

ICTSAS439 Analyse ICT system capacity and implement enhancements

ICTSAS444 Repair operating systems boot up procedures

ICTSUS402 Install and test power saving hardware

ICTSUS403 Install and test power management software

ICTSUS404 Install thin client applications for power over ethernet

Web design and development

ICTWEB430 Produce server-side script for dynamic web pages

ICTWEB435 Maintain website performance

ICTWEB436 Monitor traffic and compile website traffic reports

ICTWEB437 Create website testing procedures

ICTWEB438 Conduct operational acceptance tests of websites

ICTWEB439 Confirm basic website security

ICTWEB440 Use web authoring tools

ICTWEB441 Produce basic client-side script

ICTWEB442 Produce interactive web animation

ICTWEB444 Create responsive website layouts

ICTWEB445 Implement content management systems

ICTWEB446 Integrate social web technologies

ICTWEB447 Build basic website using development software and ICT tools

ICTWEB448 Confirm website content meets technical protocols and standards

ICTWEB449 Confirm website access and useability

ICTWEB451 Apply structured query language in relational databases

ICTWEB453 Optimise websites for mobile devices

Specialisations

As stated above, where relevant, the choice of elective units set out in the packaging rules at qualification outset can serve to provide the qualification with one or more of the following specialisations. The rules to achieve a specialisation are detailed below.

The achievement of more than one specialisation may be indicated on the same testamur as follows:

- ICT40120 Certificate IV in Information Technology (Database Development)
- ICT40120 Certificate IV in Information Technology (Database Maintenance)
- ICT40120 Certificate IV in Information Technology (Gaming Development)
- ICT40120 Certificate IV in Information Technology (Networking)
- ICT40120 Certificate IV in Information Technology (Programming)
- ICT40120 Certificate IV in Information Technology (Systems Administration Support)
- ICT40120 Certificate IV in Information Technology (Web Development).

Packaging rules to achieve a specialisation
Database Development

- Select all 5 elective units from Group A Database Development Specialisation

Database Maintenance

- Select all 5 elective units from Group B Database Maintenance Specialisation

Gaming Development

- Select all 6 elective units from Group C Gaming Development Specialisation

Networking

- Select all 7 elective units from Group D Networking Specialisation

Programming

- Select all 5 elective units from Group E Programming Specialisation

Systems Administration Support

- Select all 6 elective units from Group F Systems Administration Support Specialisation

Web Development

- Select all 7 elective units from Group G Web Development Specialisation

Qualification Mapping Information

No equivalent qualification. Supersedes and is not equivalent to:

- ICT40118 Certificate IV in Information Technology
- ICT40215 Certificate IV in Information Technology Support

- ICT40315 Certificate IV in Web-Based Technologies
- ICT40418 Certificate IV in Information Technology Networking
- ICT40518 Certificate IV in Programming
- ICT40815 Certificate IV in Digital Media Technologies
- ICT40915 Certificate IV in Digital and Interactive Games
- ICT41015 Certificate IV in Computer Systems Technology.

Links

Companion Volume Implementation Guide is found on VETNet -
https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2