



Australian Government

ICT40120 Certificate IV in Information Technology

Release 3

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Modification History

Release	Comments
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 overall integrity of the AQF alignment 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***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

Digital Media

CUAANM402 Create digital visual effects
CUACAM301 Shoot material for screen productions
CUADIG401 Author interactive media
CUAPOS401 Edit screen content for fast turnaround
CUAPOS402 Manage media assets
CUAPPM407 Create storyboards
CUASOU202 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

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

BSBWOR404 Develop work priorities

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

ICTNWK416 Build security into virtual private networks

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

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
ICTTEN513 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
ICTSAS422 Scope implementation requirements
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

- ICTWEB423 Ensure dynamic website security
- 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

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>