Australian Government

ICA40511 Certificate IV in Programming

Release 2

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

ICA40511 Certificate IV in Programming

Modification History

Release	Comments
Release 2	This Qualification first released with *ICA11 Information and Communications Technology Training Package version 2.0*
	Updated elective unit to most current version.
Release 1	This Qualification first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Description

This qualification provides the skills and knowledge for an individual to develop basic programming skills in the most commonly used programming languages.

A person with this qualification could work as an assistant programmer in a team of software developers or as a support programmer to more senior programmers or systems analysts.

Job roles

Possible job titles relevant to this qualification include:

- assistant applications programmer
- assistant programmer
- assistant software developer
- assistant web application programmer
- assistant web developer.

Pathways Information

Pathways into the qualification

Preferred pathways for candidates considering this qualification include:

- after achieving ICA30111 Certificate III in Information, Digital Media and Technology, or other relevant qualifications or units equivalent to the core of ICA30111

OR

- with demonstrated vocational experience in a range of programming-related work environments in software programming, application programming, web development or similar.

Pathways from the qualification

ICA50711 Diploma of Software Development, or a range of other Diploma qualifications.

Licensing/Regulatory Information

There is no link between this qualification and licensing, legislative or regulatory requirements. However users should confirm requirements with the relevant federal, state or territory authority. There may be some alignment with industry standard certification competencies.

Entry Requirements

There are no entry requirements for this qualification.

Employability Skills Summary

The following table contains a summary of the employability skills required by industry for this qualification. The employability skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Employability skill	Industry/enterprise requirements for this qualification
Communication	• documenting technical work in plain English • writing and presenting reports
Teamwork	• working collaboratively with project team members
Problem-solving	• using an integrated development environment, in particular language debugging facilities, to debug code • analysing software requirements
Initiative and enterprise	• responding to clients in a timely manner • identifying, analysing and evaluating information from a variety of sources
Planning and organising	• preparing feasibility reports that take into account project scope, time, cost, quality, communications and risk management
Self-management	• taking responsibility for own outputs in relation to specified quality standards • working according to the Australian Computer Society Code of Ethics regarding security, legal, moral and ethical issues
Learning	• maintaining knowledge of tools and software applications and the goods and services provided • obtaining client evaluation and feedback • providing one-to-one instruction for clients and users
Technology	• selecting and using compilers, interpreters and other programming tools to produce program code that meets user requirements

Packaging Rules

Total number of units = 18
10 core units plus
8 elective units

The elective units consist of:

- up to **8** from the elective units listed below
- up to **3** from **elsewhere in** ICA11 or any other Training Package **or accredited course** at **Certificate IV or Diploma level**.

The elective units chosen must be relevant to the work outcome and meet local industry needs.

Core units
ICAICT418A Contribute to copyright, ethics and privacy in an IT environment
ICAPRG402A Apply query language
ICAPRG403A Develop data-driven applications
ICAPRG404A Test applications
ICAPRG405A Automate processes
ICAPRG406A Apply introductory object-oriented language skills
ICAPRG410A Build a user interface
ICAPRG414A Apply introductory programming skills in another language
ICAPRG415A Apply skills in object-oriented design
ICAPRG419A Analyse software requirements

Elective units
BSBCRT401A Articulate, present and debate ideas
BSBWHS302A Participate effectively in OHS communication and consultative processes
ICADBS403A Create basic databases
ICAICT404A Use online learning tools
ICAICT408A Create technical documentation
ICAICT417A Identify, evaluate and apply current industry-specific technologies to meet industry standards
ICAICT420A Develop client user interface
ICAPMG401A Support small scale IT projects
ICAPRG401A Maintain open-source code programs
ICAPRG407A Write script for software applications
ICAPRG409A Develop mobile applications
ICAPRG412A Configure and maintain databases
ICAPRG413A Use a library or pre-existing components
ICAPRG418A Apply intermediate programming skills in another language
ICAPRG427A Use XML effectively
ICAPRG428A Use regular expressions in programming languages
ICAPRG527A Apply intermediate object-oriented language skills
ICASAD401A Develop and present feasibility reports
ICASAD501A Model data objects
ICASAD502A Model data processes

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