



**Australian Government**

# **ICA50711 Diploma of Software Development**

**Release 2**

# ICA50711 Diploma of Software Development

## Modification History

Release	Comments
Release 2	<i>This version first released with ICA11 Information and Communications Technology Training Package Version 2.</i> Elective unit ICAPRG603A replaced with ICAPRG604A.
Release 1	<i>This Qualification first released with ICA11 Information and Communications Technology Training Package version 1.0</i>

## Description

This qualification provides the skills and knowledge for an individual to be competent in programming and software development.

A person with this qualification would create new software products to meet an initial project brief or customise existing software products to meet customer needs.

### Job roles

Possible job titles relevant to this qualification include:

- analyst programmer support
- assistant programming developer
- assistant software applications programmer
- assistant software developer
- database support programmer
- web support programmer.

## Pathways Information

### *Pathways into the qualification*

Preferred pathways for candidates considering this qualification include:

- after achieving ICA40511 Certificate IV in Programming, or other relevant qualifications or units equivalent to the core of ICA40511

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*

ICA11 Advanced Diploma or Vocational Graduate Certificate qualifications or other higher education sector 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	<ul style="list-style-type: none"> <li>• communicating clear concepts and solutions for complex issues to colleagues and clients</li> <li>• using plain English, literacy and communication skills in relation to analysis, evaluation and presentation of information</li> <li>• writing and presenting complex technical reports with supporting documentation for business</li> <li>• analysing and evaluating information</li> </ul>
Teamwork	<ul style="list-style-type: none"> <li>• coordinating groups and teams</li> <li>• delegating roles and responsibilities to team members for the implementation of project plans</li> <li>• participating in teams concerned with planning and evaluation functions</li> </ul>
Problem solving	<ul style="list-style-type: none"> <li>• analysing and planning approaches to technical problems or management requirements</li> <li>• determining the system design audit technique or methodology that will be followed</li> <li>• using a debugger to detect logical and coding errors</li> </ul>
Initiative and enterprise	<ul style="list-style-type: none"> <li>• transferring and applying theoretical concepts and technical or creative skills to a range of situations</li> </ul>
Planning and organising	<ul style="list-style-type: none"> <li>• using project planning skills in relation to project scope, time, cost, quality, communications and risk management</li> </ul>
Self-management	<ul style="list-style-type: none"> <li>• taking personal responsibility and autonomy in performing complex technical operations or organising others</li> </ul>
Learning	<ul style="list-style-type: none"> <li>• extending own skills and knowledge of software development tools and applications and the goods and services provided</li> <li>• providing learning and development opportunities for project team members</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• identifying technology needs</li> <li>• sourcing, purchasing, installing, configuring and testing software components, including hardware</li> </ul>

## Packaging Rules

**Total number of units = 16**

**10 core units** plus

**6 elective units**, of which:

- 3 units must be from the elective units listed below
- the remaining units may be from the elective units below or from elsewhere in ICA11 or any other Training Package or accredited course at Certificate IV, Diploma or Advanced 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

ICAPRG418A Apply intermediate programming skills in another language

ICAPRG501A Apply advanced object-oriented language skills

ICAPRG502A Manage a project using software management tools

ICAPRG503A Debug and monitor applications

ICAPRG504A Deploy an application to a production environment

ICAPRG520A Validate an application design against specifications

ICAPRG523A Apply advanced programming skills in another language

ICAPRG527A Apply intermediate object-oriented language skills

ICAPRG529A Apply testing techniques for software development

### Elective units

ICAICT403A Apply software development methodologies

ICAICT503A Validate quality and completeness of system design specifications

ICAICT509A Gather data to identify business requirements

ICAICT511A Match IT needs with the strategic direction of the enterprise

ICAICT514A Identify and manage the implementation of current industry-specific technologies

ICANWK514A Model preferred system solutions

ICAPMG501A Manage IT projects

ICAPRG505A Build advanced user interface

ICAPRG506A Design application architecture

ICAPRG507A Implement security for applications

ICAPRG508A Create mashups

ICAPRG509A Build using rapid application development

ICAPRG510A Maintain custom software

ICAPRG512A Prepare for the build phase of an IT system

ICAPRG513A Coordinate the build phase of an IT system

ICAPRG514A Prepare for software development using rapid application development

ICAPRG515A Review developed software

ICAPRG601A Develop advanced mobile multi-touch applications

ICAPRG604A Create cloud computing services

ICASAD501A Model data objects

ICASAD502A Model data processes

ICASAD506A Produce a feasibility report

ICASAS502A Establish and maintain client user liaison

### **Selecting elective units for different outcomes**

The following examples are designed to assist in the selection of appropriate electives for particular outcomes at this level, but are in no way prescriptive.

### **Systems design**

Core units plus:

ICAICT403A Apply software development methodologies

ICAICT509A Gather data to identify business requirements

ICAICT511A Match IT needs with the strategic direction of the enterprise

ICANWK514A Model preferred system solutions

### **Programming**

Core units plus:

ICAPRG505A Build advanced user interface

ICAPRG506A Design application architecture

ICAPRG507A Implement security for applications