



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **ICAICT403A Apply software development methodologies**

**Release: 1**

## ICAICT403A Apply software development methodologies

### Modification History

Release	Comments
Release 1	This Unit first released with <i>ICAll Information and Communications Technology Training Package version 1.0</i>

### Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to apply traditional and non-traditional systems development methodologies.

### Application of the Unit

This unit applies to those working in a senior development role in a range of information and communications technology (ICT) areas who choose and apply appropriate development methodologies.

### Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

Element	Performance Criteria
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</i>

## Elements and Performance Criteria

1. Determine and select appropriate methodology for a given activity	1.1 Determine and define subject activity 1.2 Define criteria for selection of development <b>methodology</b> 1.3 Review and evaluate a range of <b>traditional and non-traditional system development methodologies</b> 1.4 Select appropriate system development methodology to suit the activity
2. Apply the selected development methodology	2.1 Create an initial <b>project</b> plan to guide developmental processes 2.2 Identify appropriate <b>task types</b> according to development methodology 2.3 Clearly describe and articulate task types 2.4 Define appropriate <b>control structures</b> that need to be created during task type execution 2.5 Associate each task type with a set of <b>input and output</b> parameters
3. Adjust project to suit appropriate methodology	3.1 Identify resources to support methodology selection 3.2 Apply appropriate methodology to solve tasks 3.3 Monitor project flow and record effectiveness against project plan 3.4 Review and document opportunities for improvement, lessons learned and recommendations for future projects 3.5 Submit results to <b>appropriate person</b> for approval

## Required Skills and Knowledge

*This section describes the skills and knowledge required for this unit.*

### Required skills

- analytical skills to analyse the benefits of one methodology over another
- communication skills to:
  - gain consensus on concepts when planning the application of the methodology to the project
  - present information
- literacy skills to:
  - prepare reports required by development methodology
  - write business reports
- planning and organisational skills to:
  - develop project plan
  - manage system development
- problem-solving skills to select development methodology suitable to a client business context
- technical skills to evaluate development methodologies.

### Required knowledge

- client business domain and organisational requirements
- current project requirements
- role of stakeholders and the degree of stakeholder involvement in the development process
- two or more current industry development methodologies.

## Evidence Guide

*The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.*

<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• develop a project plan</li> <li>• apply a methodology to a project</li> <li>• produce documentation as required by the chosen methodology.</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> <li>• design specifications and current methodologies</li> <li>• organisational standards for documentation and version control</li> <li>• detailed user requirements document, including model and scope</li> <li>• appropriate learning and assessment support when required.</li> </ul> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
<b>Method of assessment</b>	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> <li>• direct observation of candidate conducting the stages of a development methodology within the scope of a project</li> <li>• verbal or written questioning to assess candidate's knowledge of a variety of system development methodologies and their application to a systems project</li> <li>• review of supporting documentation produced by candidate.</li> </ul>
<b>Guidance information for assessment</b>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate.</p> <p>Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed.</p> <p>Indigenous people and other people from a non-English speaking background may need additional support.</p> <p>In cases where practical assessment is used it should be combined</p>

	with targeted questioning to assess required knowledge.
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## Range Statement

*The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.*

<b><i>Methodology</i></b> may include:	<ul style="list-style-type: none"> <li>• traditional methodology</li> <li>• non-traditional methodology.</li> </ul>
<b><i>Traditional system development methodologies</i></b> may include:	<ul style="list-style-type: none"> <li>• design methodology</li> <li>• structured systems analysis</li> <li>• system development life cycle.</li> </ul>
<b><i>Non-traditional system development methodologies</i></b> may include:	<ul style="list-style-type: none"> <li>• multi-view</li> <li>• object-oriented analysis and design</li> <li>• prototyping</li> <li>• soft system methodology.</li> </ul>
<b><i>Project</i></b> may include:	<ul style="list-style-type: none"> <li>• business improvement process</li> <li>• ebusiness solution involving the total organisation or part of the organisation</li> <li>• systems-only change</li> <li>• total organisational change.</li> </ul>
<b><i>Task types</i></b> may include:	<ul style="list-style-type: none"> <li>• development process activities</li> <li>• cultural</li> <li>• organisational</li> <li>• procedural.</li> </ul>
<b><i>Control structures</i></b> may include:	<ul style="list-style-type: none"> <li>• acceptance criteria</li> <li>• inspection</li> <li>• review process</li> <li>• test plans.</li> </ul>
<b><i>Input and output</i></b> may include:	<ul style="list-style-type: none"> <li>• pre-conditional options, such as a check to confirm that inputs fulfil specific requirements</li> <li>• post-conditional options, such as a check that outputs have met quality requirements.</li> </ul>
<b><i>Appropriate person</i></b> may include:	<ul style="list-style-type: none"> <li>• authorised business representative</li> <li>• client</li> <li>• supervisor.</li> </ul>

## **Unit Sector(s)**

General ICT