ICAPRG515A Review developed software

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge to apply quality standards associated with software development.

Application of the Unit

This unit applies to senior programmers who are required to ensure the quality of software produced by others.

Quality assurance is a necessary part of any code development. Imposing quality on software development involves the review of quality standards, the determination of development quality issues, and a closer review of specific quality areas.

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
Elements describe the essential outcomes of a unit of competency.	*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.*

Elements and Performance Criteria

1. Review quality standards	1.1 Review copies of the organisation's *quality standards* and *standards* related to software development and prepare for use
	1.2 Contact *appropriate person* to discuss their involvement in the review and establish their role
	1.3 Determine and document the approach to be used to validate quality during the review
2. Determine development quality issues	2.1 Examine and document processes that have a significant impact on the quality of a particular product under development
	2.2 Hold discussions on quality issues with development staff and establish agreed actions
	2.3 Allocate responsibilities to development staff
	2.4 Obtain agreement from appropriate person on procedures to ensure quality of development, where necessary
3. Review specific quality areas	3.1 Review plans to ensure that they are adequate to control the quality of the development process
	3.2 Review testing processes to ensure that defect-free software will be developed
	3.3 Examine *documentation* and methods for development to ensure that software will be supportable
	3.4 Monitor *requirements* to ensure that *client* needs are met

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with clients and development staff
- literacy skills to interpret and write technical documents
- planning and organisational skills to:
    - plan a project that addresses scope, time, cost, quality and risk
    - manage staff responsibilities
- problem-solving skills to test processes during the development of defect-free software
- technical skills to use data-modelling tools.

Required knowledge

- client business domain
- broad knowledge of industry accepted hardware and software products
- input and output drivers
- operating systems
- programming languages: two or more procedural languages and three or more object-oriented languages
- quality assurance practices and the identification of standards
- real-time programming techniques
- software application measuring and estimating methodology
- software development and configuration-management processes
- software-metrics development.

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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.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • determine quality standards and procedures that support the development of defect-free products to meet client requirements • apply appropriate quality standards to the development of products • conduct quality testing of developed software.
Context of and specific resources for assessment	Assessment must ensure access to: • data dictionaries • design specifications • data stream management system (DSMS) • simulated scenario • Australian and international software quality standards • appropriate learning and assessment support when required • modified equipment for people with special needs.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • evaluation of quality testing processes • review of documented processes to ensure quality • verbal or written questioning on quality standards.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. 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. Indigenous people and other people from a non-English speaking background may need additional support. In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.

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.

Quality standards may include:	- AS3925.1-1994 Software quality assurance - plans - AS4042-1992 Software configuration management plans - AS4043-1992 Software configuration management - AS/NZS14102:1998 Information technology - guideline for evaluation and selection of CASE tools - AS/NZS4258:1994 Software user documentation process - AS/NZS ISO/IEC 12207:1997 Information technology - Software life cycle processes - current international and Australian standards.
Standards may include:	- Australian Standards (AS) - International Electrotechnical Commission (IEC) - International Organization for Standardization (ISO) - software development standards.
Appropriate person may include:	- authorised business representative - client - supervisor.
Documentation may follow:	- audit trails - ISO, IEC and AS standards - maintaining equipment inventory, client training and satisfaction reports - naming standards - project-management templates and report writing - version control.
Requirements may relate to:	- application - business - database - network - people in the organisation - platform - system.
Client may include:	- clubs - external organisations - individuals - internal departments

	• internal employees.

Unit Sector(s)

Programming and software development