ICTPRG417 Apply mathematical techniques for software development

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 1.0.

Application

This unit describes the skills and knowledge required to use basic mathematical methods and operations in standard computer notation, Boolean algebra, data types and computer storage.

It applies to individuals in software development roles who are required to use mathematical constructions in programming.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Programming and software development

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Manipulate algebraic terms, leading to the solution of linear equations	1.1 Position number types on the number line 1.2 Evaluate various numerical expressions involving integers, fractions and indices 1.3 Simplify various algebraic expressions involving integers, fractions and indices
2. Construct mathematical formulas	2.1 Solve simple equations 2.2 Convert formulas between standard algebraic form and computer form 2.3 Create several formulas in standard algebraic form and in

ELEMENT	PERFORMANCE CRITERIA
	computer form
3. Simplify and evaluate Boolean expressions and formulas	3.1 Simplify and evaluate several Boolean expressions
	3.2 Complete truth tables based on simple Boolean expressions and logic
	3.3 Simplify and evaluate several formulas
4. Manipulate number and character representation systems	4.1 Convert numbers between binary, decimal and hexadecimal number systems
	4.2 Add, subtract and multiply numbers in binary
	4.3 Determine binary memory storage of an integer and a character

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 2.1, 2.2, 3.1, 3.3	• Interprets, and critically analyses, information from a variety of sources and records
Numeracy	All	• Selects from, and flexibly applies, a wide range of highly developed mathematical and problem-solving strategies, and techniques, when solving equations, constructing mathematical formulas, simplifying and evaluating Boolean expressions and formulas, and manipulating number, and character, systems • Uses a wide range of mainly formal and some informal, oral and written mathematical language, and representation, when solving equations, constructing mathematical formulas, simplifying and evaluating Boolean expressions and formulas, and manipulating number and character systems
Get the work done	2.1, 2.2, 2.3, 3.1, 3.2, 3.3	• Uses analytical processes to decide on a course of action, establishing the criteria for deciding between options, when evaluating Boolean expressions and formulas • Plans and sequences complex tasks, efficiently and effectively

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTPRG417 Apply mathematical techniques for software development	ICAPRG417A Apply mathematical techniques for software development	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2