



Australian Government

Department of Education, Employment and Workplace Relations

ICAGAM525A Apply digital texturing for the 3-D environment in digital games

Release: 1

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Modification History

Release	Comments
Release 1	This Unit first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to apply digital texturing for the 3-D environment in digital games, using industry standard tools.

Application of the Unit

This unit applies to concept artists, games designers, games programmers, animators and other personnel working in the game development industry.

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. Research common industry practices for texturing a 3-D environment	1.1 Research, identify and describe methods of texture creation and texture mapping 1.2 Choose suitable graphics software to create textures 1.3 Document design considerations for texturing a 3-D environment
2. Create a basic 3-D environment	2.1 Use 3-D modelling and animation software 2.2 Create simple 3-D objects 2.3 Place objects in a 3-D environment 2.4 Apply inbuilt lighting effects to the 3-D environment
3. Create multiple textures to apply to the 3-D environment	3.1 Use graphics software 3.2 Apply industry standard methods to create textures 3.3 Create textures to establish look and feel of the 3-D environment
4. Apply multiple texture effects to a 3-D environment	4.1 Load textures into 3-D animation and modelling software 4.2 Apply textures to colour the 3-D objects and environment 4.3 Use texture-mapping techniques to create multiple texture effects for a single 3-D object 4.4 Employ 3-D animation and modelling software to render an image of the 3-D environment

Required Skills and Knowledge

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

Required skills

- analytical skills to:
 - analyse documentation and images to inform implementation of digital texturing for the 3-D environment
 - interpret briefs, work instructions, and technical and conceptual information
- communication skills to:
 - check and confirm design requirements
 - communicate clearly using speech and text
 - communicate technical requirements related to graphics creation
- initiative and enterprise skills to visualise and develop concepts
- literacy and numeracy skills to develop technical design documents
- research skills to undertake practical, technical and desktop research into industry standard methods for creating and applying textures
- self-management skills to:
 - deliver required tasks without specific guidance
 - prioritise and manage own work against project plan or schedule
 - technology skills to use file formats.

Required knowledge

- capabilities and constraints of graphics software for texturing
- human resources required in the process of creating textures for the 3-D environment and the technology requirements
- methods of texture creation and texture mapping
- technical constraints that hardware imposes on software development, graphics requirements, code development and creative visual design.

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: - research and select techniques and graphic software tools to create texturing for a 3-D environment - apply digital texturing to create multiple texture effects for a single 3-D object.
Context of and specific resources for assessment	Assessment must ensure access to: - computer hardware, software, games engines and file storage - internet access for research purposes - copyright and intellectual property legislation - OHS legislation and enterprise policy - 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 a sample of a 3-D environment with digital texturing applied - evaluation of work samples or simulated workplace activities - observation of use of techniques and texturing software - evaluation of a written or verbal report on industry standards for digital texturing of a 3-D environment - evaluation of sample 2-D textures suitable for a 3-D environment.
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.
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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.

Graphics software may include:	• 3-D paint • Fireworks • Illustrator • Mudbox • Photoshop • Z Brush.
Design considerations may include:	• aesthetics • cultural context • genre • resource limitations and constraints • target market.
3-D modelling and animation software may include:	• 3ds Max • Blender • Cinema 4D • Houdini • Lightwave • Maya • Modo • XSI • Z Brush.
Simple 3-D objects may include:	• cube • cylinder • pyramid • sphere • torus.
Texture-mapping techniques may include:	• bump • displacement • light • normal • parallax • UV.

Unit Sector(s)

Game development