



Australian Government

ICTGAM305 Apply simple textures and shading to three-dimensional (3D) models for digital games

Release: 1

ICTGAM305 Apply simple textures and shading to three-dimensional (3D) models for digital games

Modification History

Release	Comments
Release 1	This version first released with the Information and Communications Technology Training Package Version 8.0. Supersedes and is equivalent to ICTGAM302 Design and apply simple textures to digital art. Updated title to better reflect unit scope.

Application

This unit describes the skills and knowledge required to assess and select simple textures and shaders to be applied to three-dimensional (3D) models for digital games. It includes designing, sourcing and configuring simple textures and shaders according to model requirements.

The unit applies to individuals who may work in roles such as digital media developers and content designers, who support the development and refinement stages of basic digital games.

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

Unit Sector

Game development

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to apply simple textures and shading to 3D models	1.1 Confirm work brief and tasks according to organisational policies and procedures 1.2 Identify design and technical constraints in consultation with required personnel 1.3 Identify game engine, software and hardware according to work brief

ELEMENT	PERFORMANCE CRITERIA
	1.4 Analyse media and file formats for digital imagery, texture production and manipulation 1.5 Document and sequence digital texturing activities in production 1.6 Document production pipeline according to work brief
2. Use shaders and textures	2.1 Identify underlying surface characteristics of 3D digital models for gaming to be textured and shaded according to work brief 2.2 Identify shaders and textures with surface characteristics, where required 2.3 Confirm texture libraries with required personnel and identify suitable textures 2.5 Select shaders and textures suitable for the game engine according to work brief 2.6 Confirm that selected shaders and textures are consistent with design requirements in work brief
3. Assign shader attributes to 3D models	3.1 Identify and select shader attributes according to work brief 3.2 Confirm lighting and rendering requirements in consultation with required personnel 3.3 Use design methods and techniques to achieve shading outcomes according to work brief
4. Acquire textures and shaders	4.1 Identify required resolution for textures according to work brief 4.2 Source textures and shaders from available online libraries according to organisational policies and procedures 4.3 Confirm that resolution of acquired textures and shaders meets design requirements
5. Design application process and methods	5.1 Identify and assess nature of surface topology and determine suitable 3D projections 5.2 Simulate natural patterns 5.3 Determine texture-mapping process according to work brief 5.4 Confirm projection-mapping method according to work brief 5.5 Adjust parameters to achieve desired effects according to organisational policies and procedures
6. Apply textures	6.1 Use textures for model according to texture-mapping process 6.2 Layer model textures and apply lighting 6.3 Test reaction of textures and adjust, where required 6.4 Complete test renders in consultation with required

ELEMENT	PERFORMANCE CRITERIA
	personnel
7. Finalise 3D models	7.1 Present test renders to required personnel for approval 7.2 Make adjustments consistent with feedback from required personnel 7.3 Save and archive files in agreed formats and repository

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	Uses foundational arithmetic when interpreting integers and decimals and when manipulating measurement, scale, ratio, colour, and shading in the application of texture
Oral communication	- Uses questioning and listening techniques, translating digital gaming terminology to plain English - Listens, responds to instructions and feedback to ensure that finished results meet design requirements
Reading	- Interprets and comprehends information in diagrams, designs, objects and images - Identifies and comprehends signs, symbols, pictures, jargon, abbreviations, computer-generated text, numbers and letters to operate digital gaming software
Initiative and enterprise	Uses creativity and initiative in design
Planning and organising	Makes decisions and implements standard procedures for routine tasks
Technology	Uses key features of digital systems and tools to complete routine tasks

Unit Mapping Information

Supersedes and is equivalent to ICTGAM302 Design and apply simple textures to digital art.

Links

Companion Volume Implementation Guide is found on VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTGAM305 Apply simple textures and shading to three-dimensional (3D) models for digital games

Modification History

Release	Comments
Release 1	This version first released with the Information and Communications Technology Training Package Version 8.0. Supersedes and is equivalent to ICTGAM302 Design and apply simple textures to digital art. Updated title to better reflect unit scope.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- apply at least two simple textures to one 3D model for a digital game
- apply at least two simple shaders to one 3D model for a digital game.

In the course of the above, the candidate must:

- adhere to gaming requirements related to file sizes and formats
- store completed file components according to organisational policies and procedures
- apply required organisational policies and procedures.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- types of textures and filters for shading and texturing effects in digital games
- features and functions of key game engines, software, and hardware, including:
 - media and file formats for digital imagery
 - texture production and manipulation
- types of shader attributes
- functions of texture mapping and projection
- types of techniques used to apply shading and texturing to 3D models for digital games, including:
 - digital image manipulation
 - lighting

- rendering
- scanning
- techniques to interpret design, texturing, and shading briefs
- functions of digital image capture
- functions and features of key models, processes and methods used in digital games, including:
 - surface topology and nature
 - 3D projections
 - natural pattern simulation
 - texture mapping
 - projection mapping
- key copyright considerations associated with designing 3D digital models
- organisational formats for documentation
- work brief and organisational policies and procedures required to demonstrate the performance evidence.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- digital model production hardware, components and resources, including peripheral devices
- models and scenes to be shaded and textured, including style shots
- opportunities for interaction with others
- work brief and organisational policies and procedures required to demonstrate the performance evidence.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>