



Australian Government

ICTGAM547 Create interactive 3-D environments for digital games

Release: 1

ICTGAM547 Create interactive 3-D environments for digital games

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to coordinate the design and technical elements of a smooth-running interactive 3-D environment.

It applies to those with high-level organisation and technical skills working as concept artists, game designers, games programmers, animators and other personnel working in the game development industry.

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>

ELEMENT	PERFORMANCE CRITERIA
1. Obtain design documents for 3-D environment and select software tools	1.1 Identify and confirm project brief, design requirements for 3-D environment and other applicable documents according to organisational procedures 1.2 Conceptualise design requirements according to project brief and other applicable documents 1.3 Discuss and determine design considerations and generate concept art for final environment design 1.4 Confirm all requirements are considered and included in design according to project brief 1.5 Identify and select applicable texturing tools, including painting, shading and texturing software according to 3-D environment requirements 1.6 Research and select applicable audio tools 1.7 Analyse and select 3-D modelling and animation software to be used 1.8 Document, explain and justify design decisions according to organisational procedures
2. Create 3-D environment	2.1 Implement basic geometry, flow and layout according to design requirements 2.2 Separate each section of environment into key parts and choose focal point for environment 2.3 Incorporate detail into focal point of level 2.4 Set reference for rest of environment using focal points 2.5 Integrate geometry and texturing and place models according to project brief 2.6 Carry out detailed pass of entire environment 2.7 Set up exterior and interior lighting 2.8 Incorporate sound and particle effects and perform optimisation as required 2.9 Perform final pass and finalise elements
3. Test and finalise 3-D environment	3.1 Test and debug 3-D environment and confirm functionality on different digital devices 3.2 Present finished 3-D environment to required personnel and amend according to feedback 3.2 Document and report how design decisions have met 3-D environment design requirements 3.4 Incorporate feedback in final design as required and obtain final sign-off from required personnel

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
Reading	Interprets, analyses and comprehends briefs, documents and conceptual information to inform job requirements
Writing	Prepares documentation detailing process and final design using comprehensive structure, layout and complex industry language
Oral Communication	Uses listening and questioning techniques and effective mode of communication to articulate complex concepts and present design using industry language for intended audience
Numeracy	Undertakes geometric calculations to deduce measurements, relationships between points, lines, angles and figures in space by using assumed properties of space
Planning and organising	Takes responsibility for planning, organising and implementing tasks required to achieve outcomes
Problem solving	- Makes a range of critical and non- critical decisions in relatively complex situations, taking a range of factors into account - Identifies and applies some basic principles of analytical and lateral thinking
Self-management	Implements actions as per the plan, making slight adjustments if necessary and addressing some unexpected issues
Technology	- Uses a broad range of features in 3-D software applications for specific purposes - Manages and maintains files in a variety of storage media and formats

Unit Mapping Information

Supersedes and is equivalent to ICTGAM521 Create interactive 3-D environments for digital games.

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 ICTGAM547 Create interactive 3-D environments for digital games

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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:

- deliver a final 3-D environment for a digital game, according to project brief, including:
 - production of concept art
 - documentation justifying and explaining design decisions.

In the course of the above, the candidate must:

- implement design requirements into a working 3-D environment
- create working interactions between user and the environment
- render 3-D environment on at least one small device and one large device and confirm pixels are optimised.

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:

- required budgeting and scheduling considerations for game design
- digital game development processes
- concept art generation processes for 3-D environments
- capabilities of industry standard texturing and audio tools
- features and functions of industry standard 3-D modelling and animation software
- optimisation techniques applicable to creating interactive 3-D environments for digital games
- technology requirements and human resources required to create games, including the team's respective skills
- industry standard game-play hardware and software products, including constraints that products impose on graphics and code development and creative visual design
- testing and debugging procedures applicable to 3-D environment creation process

- organisational procedures applicable to creating interactive 3-D environments for digital games.

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:

- hardware and software required in creating interactive 3-D environments for digital games
- project and design brief
- games engine
- digital devices
- file storage
- the internet.

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

Links

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