



Australian Government

ICTGAM521 Create interactive 3-D environments for digital games

Release: 1

ICTGAM521 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 1.0.

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 individuals with excellent organisational skills and high-level technical expertise 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>
1. Obtain the design documents for the 3-D environment	1.1 Conceptualise the design requirements, based on the project brief and other relevant documents 1.2 Identify the requirements for the design of the 3-D environment 1.3 Determine the design considerations, and generate the concept art for the final environment design 1.4 Ensure that any missing requirements are considered and included in the design
2. Identify software tools	2.1 Identify the texturing tools, including painting, shading and

ELEMENT	PERFORMANCE CRITERIA
that can be used to create 3-D environments	texturing software 2.2 Identify the audio tools 2.3 Identify the 3-D modelling and animation software to be used
3. Document and justify the design decisions	3.1 Clearly document the design decisions 3.2 Explain and justify the design decisions 3.3 Make changes, where necessary
4. Create the 3-D environment	4.1 Implement basic geometry, flow and layout 4.2 Separate each section of the environment into key parts and choose a focal point for the environment 4.3 Incorporate detail into the focal point of the level 4.4 Use the focal points to set a reference for the rest of the environment 4.5 Integrate the geometry, texturing, and place the models 4.6 Carry out a detailed pass of the entire environment 4.7 Set up the exterior lighting and then the interior lighting 4.8 Incorporate any sound and particle effects, and perform optimisation, if required 4.9 Perform a final pass, finalising any elements
5. Present the finished 3-D environment to relevant personnel	5.1 Present the finished 3-D environment to the relevant personnel 5.2 Report how the design decisions have met the 3-D environment design requirements 5.3 Justify why certain design decisions were made 5.4 Accept peer feedback and incorporate in the final design

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	1.1, 1.2	Interprets analyses and comprehends briefs, documents and conceptual information to inform job requirements

Writing	1.1, 1.3, 1.4, 3.1, 3.2, 3.3, 5.2, 5.3	- Develops readily-understood conceptual documentation using technically appropriate language - Transforms creative ideas for specific audiences using clear and detailed language to justify choices that have been made
Oral Communication	1.2, 1.3, 3.2, 5.1, 5.2, 5.3, 5.4	- Speaks clearly and concisely, converting highly technical language and terminology to plain English, when providing information - Elicits information using effective listening and open questioning techniques
Numeracy	4.1, 4.5	Undertakes geometric calculations to deduce measurements, relationships between points, lines, angles and figures in space by using assumed properties of space
Interact with others	5.1, 5.2, 5.3	Recognises and applies the protocols governing what to communicate, with whom and how when presenting work to others for feedback
Get the work done	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9	- Takes responsibility for planning, organising and implementing tasks required to achieve outcomes - Implements actions as per the plan, making slight adjustments if necessary, and addressing some unexpected issues - Makes a range of critical and non- critical decisions in relatively complex situations, taking a range of factors into account - Understands and applies some basic principles of analytical and lateral thinking - Utilises a broad range of features within 3-D software applications for specific purposes - Manages and maintains files in a variety of storage media and formats

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTGAM521 Create interactive 3-D environments for digital games	ICAGAM521A Create interactive 3-D environments for digital games	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTGAM521 Create interactive 3-D environments for digital games

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Performance Evidence

Evidence of the ability to:

- interpret design requirements, produce concept art accompanied by documentation that justifies and explains design decisions
- implement design requirements into a working 3-D environment
- create working interactions between the user and the environment
- deliver a finished 3-D environment and report on design decisions to others.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- summarise the budgeting and scheduling considerations for game design
- discuss the process used to develop computer games
- outline the technology requirements and human resources required to create games, including the team's respective skills
- explain current game-play hardware and software products, including any constraints that product impose on graphics and code development and creative visual design.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the game development field of work, and include access to:

- computer hardware and software
- games engines
- file storage.

Assessors must satisfy NVR/AQTF assessor requirements.

Links

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